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TRANSCRIPT OF CONFERENCE, POLLUTION OF INTERSTATE WATERS MISSOURI RIVER, KANSAS CITY METROPOLITAN AREA

Public Health Service
Kansas City, Missouri

3 December 1957

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POLLUTION OF INTERSTATE WATERS

MISSOURI RIVER

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CONFERENCE AT KANSAS CITY, MISSOURI
On Interstate Pollution
In the Missouri River

Council Chambers
26th Floor City Hall
Kansas City, Missouri

December 3, 1957

Chairman:

Mr. Murray Stein
Chief of the Enforcement Section
Water Pollution Control Program
U. S. Public Health Service
Washington 25, D. C.

Conferees:

Mr. Glen J. Hopkins
Regional Engineer, Region VI
U. S. Public Health Service
Kansas City, Missouri

Mr. Albert W. Happy
Chief Engineer
Division of Health
Jefferson City, Missouri

Mr. Dwight D. Metzler
Chief Engineer
Kansas State Board of Health
Topeka, Kansas

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OTHER APPEARANCES

U. S. Public Health Service:

Leonard B. Dworsky
Assistant Regional Engineer, Region VI
U. S. Public Health Service
Kansas City, Missouri

City of Kansas City, Missouri:

H. Roe Bartle, Mayor
Reed McKinley, Director of Public Works
James Kelly, Administrative Assistant to the Mayor

State of Missouri:

Henry M. Hardwicke, M. D.
Director of Division of Health
Jefferson City, Missouri

Jack K. Smith
Missouri Division of Health
Jefferson City, Missouri

Colonel L. E. Laurion
District Engineer
U. S. Army Engineer District
Kansas City, Missouri

P. G. Barnickol
Missouri Conservation Commission

Herbert L. Hartung
Sanitary Engineer & Superintendent of Production
St. Louis County Water Company
8390 Delmar
University City 24, Missouri

R. D. Scharz, Mayor
North Kansas City, Missouri

Clifford Sharp
Haskins, Riddle & Sharp
Consulting Engineers
Kansas City, Missouri

- - - - - - - - -

J. H. Johnsen, Assistant Plant Manager
Standard Oil
Sugar Creek, Missouri

State of Kansas:

Carl Hodgkinson
Chief of Water Pollution Control Section
Kansas State Board of Health
Topeka, Kansas

Leo J. Moroney
Representing Mayor Paul Mitchum
Kansas City, Kansas

Martin E. McMahom
Phillips Petroleum Company
2801 Fairfax
Kansas City, Kansas

(A list of others in attendance is attached as "Appendix A")

MR. STEIN: May we get started? May I have your attention, please.

This conference in the matter of pollution of interstate waters of the Missouri River in the Kansas City Metropolitan area, involving the States of Kansas and Missouri, is being held under the provisions of the Federal Water Pollution Control Act and, in accordance with the terms of that Act, was called by the Surgeon General of the Public Health Service.

The purpose of the conference is to bring together the State Water Pollution Control Agencies, the localities concerned and industries and the Public Health Service to review the existing situation, the progress which has been made, and to lay a basis for future action by all parties concerned and to give the states and localities an opportunity to take any remedial action which may be indicated under state and local law.

The conference technique is a rather old one. As a matter of fact, it is used by many state agencies informally in the usual conduct of their business in the field of water pollution control. The notion of a conference long ago was proposed by the United States Supreme Court in the famous case of New York and New Jersey involving interstate pollution. The court said as far back as 1921, and I quote:

"We can not withhold the suggestions inspired by the consideration of this case that the grave problem of sewage disposal presented by the large and growing populations living on the shores of New York Bay is one more likely to be wisely solved by cooperative study and by conference and mutual concession on the part of representatives of the states so vitally interested in it than by proceedings in any court, however constituted."

This, I think, is particularly applicable to a complex metropolitan situation such as we have in the Kansas City area. Many of the smaller communities' activities necessarily will be contingent upon the action taken by the major municipalities in this area.

Under Section 8 of the Federal Act the Surgeon General has notified the official state water pollution control agencies of this conference. These agencies are the Kansas State Board of Health and the Missouri Division of Health. Under the law this is a conference between these official agencies and the Public Health Service. The official agencies, of course, are privileged to bring whomever they wish to the conference and have them participate in the conference.

The conferees have been designated by these agencies, and for Kansas the conferee is Mr. Dwight Metzler, for Missouri the conferee is Mr. Albert Happy, and for the Public Health Service the conferee is Mr. Glen Hopkins.

Both the states and the Federal Government have responsibilities in dealing with interstate water pollution control problems. The Federal Water Pollution Control Act states that the states have primary rights and responsibilities for taking action to abate and correct interstate pollution. It has always been the policy of the Public Health Service to recognize this traditional roll of the states. The function of the Public Health Service is to encourage the states in these activities. However, the Public Health Service is charged by law with specific responsibilities in connection with interstate pollution control problems.

The Federal Water Pollution Control Act provides that pollution of interstate waters which endangers the health or welfare of persons in a state other than that in which the pollution originates is subject to abatement. When the Surgeon General believes that such pollution is occurring, he is required to call a conference of this type. This has been done.

This conference, I might point out here, is a logical sequence to much state activity and with the assistance of the Public Health Service in the entire Missouri River. For example, similar conferences have already been held in Omaha and St. Joseph.

We realize that in many areas there has been considerable progress made toward the solution of interstate pollution problems by the cities, the states, industries and local political bodies.

The conference will be useful in providing a clear record delineating the progress which has already been accomplished and indicating what still needs to be done to correct interstate pollution problems.

Under the Federal Act the Surgeon General is required at the conclusion of the conference to prepare a summary of the conference which will be sent to all conferees. The summary, according to law, must include the following:

(1) Occurrence of pollution of interstate waters subject to abatement under the Federal Act;

(2) Adequacy of measures taken toward abatement of pollution; and

(3) Nature of delays, if any, being encountered in the abatement of pollution.

It is suggested that the conference discussions be directed toward discussing these points so that we may prepare a serviceable summary at its conclusion. In addition the law requires the Surgeon General to determine at the conclusion of the conference whether effective progress toward abatement of pollution is being made.

To aid the Surgeon General in making this determination, it is strongly suggested that the conferees agree upon a time schedule of remedial action. Such a time schedule, of course, should be a realistic and reasonable one. Once this time schedule is accepted by the conferees, I should point out that it is primarily the function of the states, and certainly a primary function of the Federal Government in conjunction with the states, to see that this time schedule is adhered to.

Now a word about the procedures governing the conduct of the conference. Mrs. Hough is making a stenographic report of these proceedings for the purpose of aiding us in preparing the summary and also providing a record of what is said and done here. We will make both the transcript of the conference and the summary available to the conferees.

An agenda has been distributed to the conferees. The agenda is to aid us in directing our discussion toward the points required to be covered by law. However, that agenda can be adjusted to meet particular schedules or points as they arise.

All the conferees will be called upon to make statements. The conferees, in addition, may call upon the participants they have invited to the conference to make statements.

At the conclusion of such statements the conferees will be given an opportunity to comment or ask questions and at the conclusion of the conferees' comments or questions I may ask a question or so, too.

This procedure has proved effective in developing a clear statement of the problem and agreements on equitable solutions.

Before we would begin calling on the conferees I should like to point out that a sheet of paper is being distributed through the audience and we would appreciate those who have not done so signing their name and indicating what organization they are representing.

At this point we would like to introduce Dr. Henry M. Hardwicke, Director of the Division of Health, the official state water pollution control agency of Missouri.

Dr. Hardwicke, Would you like to say anything at this point, Dr. Hardwicke?

DR. HARDWICKE: I would only like to say that I have a deep interest in the control of stream pollution, and that a statement by the Division of Health will be made by a representative today.

MR. STEIN: Thank you Dr. Hardwicke.

Now I would like to introduce Mr. Carl Gross, of the Illinois Sanitary Water Board, who is attending this conference as an observer. He is also a representative of the official state water pollution control agency of Illinois.

Mr. Gross.

MR. GROSS: Obviously, Illinois has no statement to make at this time. Thank you.

MR. STEIN: Thank you, Mr. Gross.

One more point on procedure. When participants other than the conferees are called upon it would be appreciated if they would go to the lectern over there, announce their name and affiliation for the benefit of the stenographic report before making a statement.

At this point I should like to call upon Mr. Glen Hopkins, Regional Engineer of the Public Health Service, stationed in Kansas City, who will make a general presentation of the interstate pollution problem in this area.

Mr. Hopkins.

MR. HAPPY: Mr. Chairman?

MR. STEIN: Yes.

MR. HAPPY: May I ask at this time permission to digress from the agenda to permit Mr. Roe Bartle, Mayor of Kansas City, to present his statement, since it is my understanding that he has another commitment that will interfere with his attendance here a little later.

MR. STEIN: That will be perfectly agreeable, Mr. Happy. Would you want to call on Mayor Bartle?

MR. HAPPY: Mayor Bartle, will you please present your statement at this time?

MAYOR BARTLE: Well, indeed, Mr. Chairman, and gentlemen of the panel, I take it for granted that I am following the procedure that was outlined and suggested.

I am profoundly grateful to my friend, Mr. Happy, for permitting me to make this statement, in view of the fact that I do have a number of commitments today, unfortunately, commitments that were established before this hearing or conference, as it is termed, was set up.

I crave the indulgence, Mr. Chairman, of you and the members of the panel in order that I might use some of my trusted colleagues and associates, I, having been a president of an institution of higher learning in bygone days, do not either read or write very well. (Laughter.) Unfortunately, I can not read in such a fashion that it can be understood by those who are about. I know what I am reading, but nobody else does.

We do have in the personality of one Jim Kelly, my strong right arm and administrative assistant, a man who does know how to read, and if you, Mr. Chairman, and the panel have no objection I would like to sit there (indicating) and bring Major Kelly here and let him do what we are paying him to do, that is to do the job of the Mayor of this city. (Laughter.) I get the credit and he does the work; I furnish the brawn and he furnishes the brains.

I should then like to ask a man in whom everyone in the City Council has supreme confidence, the veteran Director of Public Works of this city, a distinguished engineer, to join me at the other table, because I know that in all probability the Chairman and the members of the panel would like to interrogate me and I have got to have somebody here that can give the answers. I just work here. I occupy a large space on the 29th floor. (Laughter.)

I do want to say, Mr. Chairman and gentlemen of the panel, that this statement as drawn represents the composite thinking of the nine members of the City Council of Kansas City, Missouri, who have given considerable thought to the problem at hand and they do recognize it as a problem. It is not the thinking of any single individual. It is, indeed, the belief and the conviction of all nine duly elected members of the City Council after conferring at length with members of our administrative staff who have been wrestling with the problem and giving full and thoughtful consideration to all of the ramifications related thereto for a period of days, weeks, months, years.

I would like to say to the distinguished gentleman from Washington that when I became the Mayor of this city I was really inaugurated with pomp and splendor in this room. Immediately thereafter the individuals, some of whom are here sitting today, that relate themselves to the whole program of public health, saw to it that--not only those from Missouri but from Kansas as well--that I had a very interesting trip up and down the Missouri River and up and down the Kaw. I learned more in a matter of a half a day riding up and down those rivers about polluting streams and about raw sewage than I had ever learned in all of the years of my life combined. And I can assure you that I was well inaugurated, both publicly and privately, and briefed no end by those who are related to our own Department of Public Health in the State of Missouri.

So I want you to know, Mr. Chairman and gentlemen of the panel, that I do have some intimate knowledge of the problem. I do recognize it as a problem. And if the panel has no objection, I should like for Major Kelly to earn his salary today and come over here and read this statement, if he will, please.

MR. KELLY: Thank you, Mr. Mayor.

Mr. Chairman, members of the panel, ladies and gentlemen:

Your interest and concern in the problem which we discuss today is quite understandable. On behalf of the City of Kansas City, Missouri, I extend our greetings and sincere wish that this conference will contribute to the final and successful accomplishment of a greatly desired objective.

We have had the opportunity of reading the transcript of a similar conference conducted at the direction of the Surgeon General and find that it is customary for the local governmental body to open its statement with a dedication to the goal of abatement of pollution of our water supply.

The Cities and their elected officials and the several groups of civic minded citizens within this metropolitan area have given vigorous and dynamic support to the plan for development, conservation, and maximum use of the water resources of this valley of the Missouri River and its tributaries as envisioned by the Pick Sloan Plan. I believe the Corps of Army Engineers will agree that the vigorous support of that plan by this community has been a major factor in convincing the Congress that sufficient appropriations should be made each year to complete at the earliest possible date the gigantic system of reservoir control of our precious water resources.

From a strictly selfish stand, this area must be a firm and constant supporter of this resources program as we fully realize that the potential development which is possible in this one-sixth of our nation which lies in the Missouri River Valley must be attained to insure the maximum development of this local area.

As we approach the day when we will have a controlled, regulated stream, devoid of threat from flood damage, we must certainly turn our thoughts to the urgent problem of improving the quality of our water supply through proper abatement of objectionable pollution.

The U. S. Public Health Service has presented data to the chairman and those in attendance at this conference to establish the fact that the pollution of the Kansas and Missouri Rivers by discharge from our municipal sewers and direct discharges by industries results in a degree of contamination within the Kansas City reach far in excess of any conceivable limit of tolerance. If the conference members desire any further confirmation of that fact, a short observation of the outfalls of the Turkey Creek or Blue River sewer will serve that purpose.

The purpose of this rather lengthy introduction is to convince the Panel and to make public record of the fact that Kansas City, Missouri, fully recognizes the fact that objectionable pollution exists and that this City fully realizes that action must be taken to reduce that contamination down to an acceptable level.

This City has taken certain steps to reduce this pollution which I will briefly describe:

1. For many years, the garbage collected in this City was hauled to a hog feeding yard at 25th and State Line. All of this garbage was offered to a large herd of hogs. The unconsumed portions of this garbage and offal from the animals was then run through a grinder and discharged into the Kansas River through the Turkey Creek Sewer. This process has been completely discontinued. Residental garbage is buried in fills which are actually operated as "sanitary fills". The garbage from commercial establishments, which has a high food value, is offered to a herd of hogs. The unconsumed portion of this food and the manure from the pens is then gathered up and hauled to the site of the "sanitary fill". After the pens are cleared of solids, they are hosed down and only this normal sewage is allowed to enter the sewer system.

2. This City maintains control and supervision over all sites which are used for disposal of trash and refuse. No waste of any sort is allowed in either the Kansas, the Missouri, or the Blue River.

3. Another action in which this City has participated which has, for its ultimate goal, avoidance of further pollution of our streams is described:

Lying south of our present City is the watershed of two tributaries to the Blue River which are known as Dykes Branch and Indian Creek. Part of this watershed is in Missouri and will become part of our City on January 1, 1958. There is in this watershed a center of population adjoining the Missouri-Kansas state line which lies in the State of Kansas. Since good sewer engineering cannot recognize such artificial boundaries as State Lines, we are indeed pleased that a joint agreement could be worked out between this City, the Jackson County Court, the City of Leawood, Kansas, and the principal developer which will permit the collection of the sewage from this watershed and its transportation to the proposed site of our major treatment plant near the outfall of the Blue River sewer.

4. The major effort which we are now making towards the full accomplishment of the desired goal of abatement is confined entirely to Engineering. This effort I will describe in a rather general manner as I know the local representatives of the U. S. Health Service and the State Division of Health are familiar with the detailed operation.

We have two areas of study; namely, the portion of the City which lies north of the river in Clay County and that part which lies south of the river in Jackson County. We have engaged two engineering firms to study these two different areas. The north area has been assigned to the firm of Haskins, Riddle and Sharp, and the south portion to the firm of Black and Veatch.

The major problem lies in the south area and therefore we may safely presume the engineering effort in the north area, in Clay County, will keep pace with the study and engineering report on the south portion. In fact, the firm of Black and Veatch have the assignment of consolidating the two reports into a single and coordinated report for the entire City.

In order that the record may indicate the full scope of action, I extract from the contract with Black and Veatch an enumeration of the several assignments with which they are charged:

a. The purpose of this engineering study is to provide Kansas City with the most economical and feasible plan for the collection, interception, and treatment of sanitary sewage. This, of course, means that the Engineers will make studies of several plans or schemes as might be conceived in order to achieve an end result as described above.

b. The study area shall be defined as that portion of Kansas City lying within Jackson County plus the 1958 annexed area as hereinbefore referred to.

c. Study the existing principal trunk sewers to determine the amount of sanitary sewage flowing in each of these sewers and how much additional sewage can be carried by these same sewers.

d. Review previous engineering reports made on sewers and sewage treatment problems in the study area, also in the political subdivisions adjacent to the study area. Consult with authorized representatives of the Director of Public Works, as desired by the Director, to determine the course and progress of the study.

e. Prepare preliminary plan suggesting methods of intercepting sanitary sewage from the existing sewers. Estimate cost and show the definite location of facilities necessary to transport the sewage for treatment.

f. Develop basic design data to be used in determining the sizes of additional sewers.

g. Prepare a preliminary sanitary sewer plan for trunk sewers required in addition to the existing sewers to serve the study area, and prepare estimates of cost of these principal trunk lines.

h. Study industrial wastes now being discharged into sewers. Determine if any of these components of the waste are harmful to the sewers or would require special or additional treatment at the sewage treatment plant. Study

and make recommendations as to the character and potency of sewage that industries should be permitted to continue to discharge into the sewer system.

i. **Make recommendations for equitable charges for sewer users who are discharging sewage into the sewer system, which has a strength and potency greater than ordinary domestic sewage.**

j. **Prepare a preliminary plan for sanitary sewage treatment for the study area. This plan shall indicate the location of plants, the plant sizes, method and type of treatment, the initial cost, and the operation and maintenance cost.**

k. **Study and make recommendations for the transportation of sewage and location of treatment plants for sewage flowing either into Kansas City, Missouri, from other political subdivisions, or sewage from those areas of Kansas City, Missouri, which would flow away from the City or through other political subdivisions.**

l. **Estimate the cost of the trunk sewers which Kansas City would normally build out of general funds or from general obligation bonds. This estimate should be separated from other estimates.**

m. **Cooperate and consult with other consulting engineers who are preparing similar plans for the City in the study area in Clay County north of the Missouri River. The consultants for the study area north of the river will furnish the Engineers with the Engineering report and estimates for trunk and interceptor sewers and treatment plants in that area, and the Engineers will incorporate this information into their reports.**

n. **Prepare and deliver to the City a comprehensive report describing and evaluating each of the plans considered and recommending a Master Plan for the City including the 1958 and 1959 Annexations for adoption.**

o. **Prepare and deliver to the City a feasibility report for revenue bond financing for the construction, operation and maintenance of the interceptor sewers, transportation facilities, and treatment plants for all of the area of the City, including the 1958 and 1959 annexations.**

p. **Conduct the study in close coordination with the staff of the Director of Public Works, and, as the study progresses, the direction of the investigation will be subject to continual review and consultation by both parties.**

This Panel is probably concerned with the progress which is being made in the fulfillment of this engineering assignment. In order to supply that information, I make part of this statement and quote from a report of the Consulting Engineers, dated November 22, 1957.

"1. In scheduling our work on this project we have set up March 1, 1958, as the date of completion of our report. The target date of February 15 was established at the time of our conference with the representative of HHFA and we will, of course, exert our best effort to meet this date.

"2 In July we presented to you four alternative plans for the collection and treatment of the sewage from our study area. Our studies of these plans are still in progress.

"Recent developments relating to future minimum flows in the Kaw River detract from the feasibility of any plan which includes a primary sewage treatment plant along that water course. If the minimum flows occur, as now predicted by some Federal agencies, it is expected that public health authorities would require the City to provide complete treatment for all sewage discharged into the Kaw River. The indicated site near the mouth of the Turkey Creek sewer is not of sufficient area for a complete treatment of the required capacity.

"We have devised an additional alternative plan which is now under study. This plan includes a sewage force main extending from the Turkey Creek outfall sewer to the north and northeast to the Blue River treatment plant site. The dry-weather sewage flow in the Turkey Creek outfall, as well as that in all of the outfall sewers discharging into the Missouri River, would be pumped into this force main. Other features of this plan relating to facilities in the Blue River Basin are identical with those included in our Plan A, as previously presented to you. (Plan A proposed the collection of all sewage on the south side of the river at a major treatment plant, near the outfall of the Blue River sewer.) The results of our studies of this plan so far indicate that it may prove to be the most feasible of all plans under consideration.

"3. Our studies have not progressed to the point where we feel that we can make a statement as to the probable over-all cost of the complete Master Plan program for the area of Kansas City south of the Missouri River.

"4. Our estimate of time required to complete final construction drawings and specifications for the first stage of the project is 12 months. In making this estimate we envision the initial authorization as including dry-weather flow interception facilities on the Turkey Creek outfall sewer and on all outfall sewers discha[illegible]ng into the Missouri, a gravity trunk intercepting sewer, or a force main, extending from the Turkey Creek outfall sewer to the north and northeast to the Blue River treatment plant site, a primary treatment plant, and a new gravity trunk sewer in the Blue River valley from Round Grove to Indian Creek. Plans to permit a substantial start, say a section of intercepting sewer, could probably be completed in six months.

"5 Wastes from industries reflect the raw materials and processes employed and are as complex and diversified as the industries themselves. Some industrial wastes resemble domestic sewage in that they contain organic pollutants. However, the organic strength of these wastes is often far greater than that of average municipal sewage. Wastes from the meat-packing and milk-processing industries are examples of strong, organic industrial wastes.

"The strength of such wastes can be reduced by improved industry 'housekeeping' and by pretreatment, prior to discharge to municipal sewers. Most organic industrial wastes, after strength reduction by the industry, are amenable to transportation through the public sewer system and treatment at the municipal plant. Other industrial wastes are predominantly inorganic in character and may contain substances that will damage the municipal sewers and interfere with the functioning of the treatment works. Industry control and pretreatment, prior to discharge to the city sewer system, are definitely required in such cases. Metal-finishing wastes, containing acids, alkalies, cyanides and toxic heavy metals, such as chromium, are examples of industrial wastes of the inorganic type. No rigid rules can be established regarding the acceptance or exclusion of industrial wastes by the City. In general, however, we recommend the following approach to the industrial waste problem:

"a. Permit the direct discharge to the City sewers of those industrial wastes that can be satisfactorily handled by the City's sewerage system and sewage treatment facilities. (Industrial wastes in this category include those commercial laundry operations, small milk-processing plants, restaurants, and many other small commercial and industrial enterprises.)

"b. Require industries producing large quantities of deleterious wastes to exercise in-plant control to reduce strength, volume and flow-rate or to provide pretreatment prior to discharge into the City sewer system. (Wastes from large milk-processing and meat-packing plants and metal pickling and finishing operations will often fall in this category.)

"c. Exclude from the City sewers to the maximum practicable extent all materials that would injuriously affect the sewers or treatment plant or create a hazard to operating personnel. (Such wastes include gasoline, ashes, asphalt, mineral oils, unshredded garbabe, grain, large quantities of acids, strong cyanide solutions, and strong solutions of heavy metals.)

"One of the best means of encouraging industries to exercise reasonable control over their wastes is by the establishment of a service charge that is based on waste strength as well as volume. Thirty-two cities, including Cincinnati, Ohio; Pittsburgh, Pennsylvania; and Des Moines, Iowa, have established service charges that are based on strength and quantity. The general principle followed is that of making a 'normal charge' for what is considered to be a normal load and an 'excess load charge' or 'surcharge' for above-average- strength wastes.

"Industries discharging wastes into the Blue River are aware of the condition of the river and of the need for corrective measures. However, in general, they have adopted an attitude of watchful waiting; and insofar as is known, none plan any immediate anti-pollution steps of major significance."

The City of Kansas City, Missouri, is not in a position at this time to commit itself to a schedule for the attainment of this effort. In our rigid provisions of our Charter, we cannot program expenditure of unavailable funds. This City cannot, with any assurance whatever, establish program spending until funds are actually in hand.

Our City Counselor advises that the Revenue Bonds which will be needed to provide the large sum of money that will be needed must be authorized by a four-sevenths vote of the people. Therefore, we cannot program expenditures on anticipation that such a proposal will carry when first offered.

However, instead of proposing a schedule, we would like to hold before us certain target dates and strive to meet as nearly as possible these goals.

March 1, 1958	Submission of basic Engineering and Feasibility Report

March 1, 1959	Acceptance or revision of the report and provision for financing
September 1, 1959	Submission of Bond Proposal to electorate of Kansas City

If proposal receives approval of voters, then the following schedule will be our objective:

January 1, 1960	Award of first construction contract on some principal phase of the work.
March 1, 1960	Award of contracts for balance of the system
March 1, 1962	Completion and start of full operation of the treatment facilities

Gentlemen, this concludes our report. We will attempt to answer any questions you may have.

MR. STEIN: Thank you, Mr. Kelly.

Mr. Metzler, do you have any questions?

MR. METZLER: Yes, there is a question that I would like to ask. First I think we should pay tribute to Mayor Bartle and his colleagues on the City Council for the tremendous amount of progress which has been made in this matter within the last--well, since the time you mentioned of the boat trip on the Kaw and the Missouri on May 25th.

MAYOR BARTLE: You were along, were you not, sir?

MR. METZLER: I remember being along and I remember with a great deal of pleasure the negotiations under which the garbage was taken out of the Kaw River up at this point in Kansas and how you proceeded within 30 days to do this.

The question I have here relates to the amount of time that elapses between the submission of the engineering report and the acceptance of that report. A full year seems like a rather long time and I wondered, you must have had some good reason for that. Would you mind explaining that?

MAYOR BARTLE: I will ask Mr. McKinley to answer that in a moment. But I will remind you, sir, that this City Council is composed of nine men, six of whom are lawyers, and when these engineering reports come to those of us who are members of the Bar it takes a long time to understand what they are talking about. We have a Public Relations Director, we have a cattle buyer and we have the Secretary of the Board of Trade plus six lawyers.

I find it very difficult, ofttimes, to understand these engineers' reports and I have to send for Mr. McKinley to decipher what they mean. I offer apologies for the way I am trying to speak today.

I should explain to you, sir, and to the Chairman of the panel and others, that many years ago in the days of my youth I tried to play football and God gave me two very fine sets of teeth and the second set of teeth were destroyed by a group of thugs and yeggs and boilermakers and blacksmiths and men that were on the Georgia chain gang who were playing for Georgia Tech and as a result I have been paying annually considerable to have some store-made teeth and last night they went haywire on me and I am having difficulty enunciating. I would like to charge that also to engineers from Georgia Tech. (Laughter.)

Mr. McKinley, would it take you a year to decipher all that these two firms would offer us in the way of counsel, advice, and plans? You know how difficult it is for those of us around City Hall to even understand you, much less these guys we pay handsome fees to.

MR. McKINLEY: Mr. Mayor, Mr. Chairman. I believe we can digest and bring the engineering report to a conclusion that the administrative staff would recommend to the Honorable Council within half that time, six months. But I believe that it is very desirable that we give the Council at least a similar length of time to bring this to a conclusion and elicit the support that is going to be needed to successfully present a proposed Revenue Bond Measure to the electorate of this city and present it in such a manner that it has reasonable chance of passing. So I am merely dividing the time, in my thinking, between the engineers and the council.

MAYOR BARTLE: You mean you are giving--

May I ask my Director of Public Works?

Do you mean to say that you are giving us as much credit for intelligence as you and your staff, the administrative staff, have? I am overwhelmed. (Laughter.)

MR. McKINLEY: Well, I didn't say that, Mr. Mayor. You merely implied that. (Laughter.)

MAYOR BARTLE: If the panel thinks that it ought to be shortened, I think that the City Council would be willing to abide by any recommendation or suggestion that might come from those of you who are dealing with the problem. I realize that Mr. McKinley and his staff are working closely with the engineers that we have under contract.

I do realize that Mr. McKinley has hit upon something which I think is very, very vital when you talk about March 1, '59, to September 1, '59, to submit the proposed bond issue to the citizenry of Kansas City. I realize that that includes, really, March, April and May, and the three months in the summertime are pretty rough months, that that is only a six-months period, in reality, to try to educate the public as to the actual need and how really important it is to the health and the welfare of the community at large, and I do not believe that I have to say to this panel that Kansas City is no different than any other city, they are allergic to taxes. And there is no tax of any type or character that I have found that the taxpayers like in Kansas City. I haven't found any of them yet, and I think I have tried them all.

MR. METZLER: I would like to ask one or two more questions bearing on this same point.

MR. STEIN: Go ahead.

MR. METZLER: The present council has spent a lot of time, as you indicated, Mayor Bartle, in studying this matter so that they are familiar with it. Would you mind telling someone who is not familiar with the terms of office that these folks serve when the next folks will stand for election or maybe decide not to run?

MAYOR BARTLE: There is an election which will be held the third Tuesday in the month of March, 1959, and the duly elected council will be inaugurated on the second day of April, 1959. After that I hope to play with my grandchildren.

MR. METZLER: That brings me to the third comment and question here. There certainly are some advantages to carrying this at least as far as the bond election, it seems to me, with the officials that are now in and have studied the problem and have the best understanding. It seems to me from the standpoint of getting a good program and one that is economical for the citizens of Kansas City, Missouri, that this is desirable. I would like to raise the question--you may not want to answer it now--about the possibility--

MAYOR BARTLE: I never evaded any question from you or anybody else, sir.

MR. METZLER: I appreciate that.

--the possibility of moving this acceptance of the report back sufficiently so that the bond election could be held in, say March of 1959 instead of September. As far as Kansas is concerned, we would be quite pleased, I might say, with the schedule so far as the first construction contract and the balance of the construction. I think this is very realistic and I am sure it is some thing that you can accomplish, but is still means that you would be moving along at a quite satisfactory rate. But I would like to ask the question about that bond election coming back.

MAYOR BARTLE: You understand that I am strictly an amateur in politics, but if I was going to stand for re-election I certainly would not present a huge bond issue to this community on the eve of the day that I was going to run for Mayor. And I do not believe you can get this City Council, if they want to come back into office, to submit a large bond issue, and it would be a large bond issue. If I can believe everything that Mr. McKinley tells me, and he has never mislead me yet, we are not talking about peanuts now, we are talking about millions.

Is that right?

MR. McKINLEY: I am sure that is right.

MAYOR BARTLE: And I just can't imagine anybody going to run for office and then on the eve of their running for office ask the city to vote a huge bond issue. It would be the best way in the world to defeat those that want to stand for re-election. Because again I must point out that America today is allergic to taxes. Primarily because of the heavy Federal taxes which we are required to pay it makes it very difficult to get local taxes to take care of fire and police and health on a local basis. I checked the figures the other day and discovered that back in 1940 local government was getting 51 cents out of every tax dollar and now they are only getting 13 cents out of every tax dollar, and the Federal Government is mounting, mounting, mounting, mounting.

Now, if the Federal Government could find a way to finance this local program, I am sure we could prosecute it with vigor and with intelligence and great effectiveness, if only the panel would go back to home base and say in Washington, here is a fine city and its environs and the suburbs and they all ought to have a nice, clean decent place in which to live, and get Uncle Sam to give it to us on a silver platter. I can't imagine us turning it down. However, I happen to be one who believes that the less we get from Washington the better off we are going to be locally.

MR. METZLER: Thank you. Those are all the questions I have.

MR. STEIN: Thank you

Do you have any questions, Mr. Happy?

MR. HAPPY: No, I have no questions.

MR. STEIN: Mr. Hopkins?

MR. HOPKINS: I would like to raise one question.

I notice the bond election, the objective is September 1, '59?

MAYOR BARTLE: Yes, sir.

MR. HOPKINS: The award of the first contract January 1, '60, only three months apart. Would your consulting engineers be proceeding with detailed plans and specifications in advance of your bond election? Otherwise, it seems that the time for preparation of plans is less than your engineers estimated in your statement.

MAYOR BARTLE: I would, of course, defer to Mr. McKinley after I have made the statement that if it was essential and necessary to have plans and specifications set up by the engineers prior to the carrying of a bond issue, I don't know where we would get the money. We still have to take care of our police, fire, and hospitals, and have to patch up some of the holes in the street, or Mr. McKinley thinks we should. I don't know where we would get the money to authorize consulting engineers and certainly Mr. McKinley's staff is not sufficiently large that he could just pull a group of engineers off of their normal jobs and say, "you start writing plans and specifications."

Am I correct or wrong?

MR. McKINLEY: Mr. Mayor and Mr. Chairman.

We realized that this schedule was quite tight. This statement the Mayor made as to the preparation of these plans in advance of a bond issue is entirely correct. We do not enter into contracts until money is in hand.

However, I have consulted with the engineers on this project and in this basic engineering we are going perhaps a little farther than preliminary because the key to the system, as we now see it, is this interception of all of the sewage to a central point. Therefore, we are actually making core drillings to find out whether that is a sensible approach. We will have, our engineers and ourselves will have, in hand better than preliminary information. And it is our thinking that by strenuous effort we could make a start on a major part of the collecting system and start this interception tunnel or open cut, or whatever it may be.

The time is very short, but if this bond proposal is approved in the tremendous amount of money that is pictured for this we can not let that money lie idle for that item of interest during construction for a single day that we can prevent, so we will put our tremendous effort behind getting it going.

This is tight, I realize that it is tight, but we purposely set it so.

MAYOR BARTLE: But Mr. Chairman and gentlemen of the panel, does it not indicate, at least, an earnest desire on our part if we would award the first construction contract a matter of three, months after the bond issue is carried? We didn't say how much, we just said we would let a contract, which I think is very vital and very important, and then you will notice that six months later would be the awarding of the balance of the contract.

I have discovered in trying to keep my hand on the pulse of the public that when they vote bonds for a specific thing they would like to see some evidence at the earliest possible moment that they have voted for something that was essential and that the city fathers and the administrative staff are moving in that direction, and if the contract was only of a minor nature, if the fourth estate and radio and television could tell the world three months after the bonds had been voted, and it takes a little time, of course, to sell those bonds, you have to go back and make love to the boys in New York, woo them, tell them how much we love them, how little interest we want to pay, if at the end of a three-month period they have voted these bonds and a contract is let I think the average citizen believes that we are moving in the right direction. And then that gives us another three months in which the engineers can, we hope, make available everything that is essential and necessary to let contracts intelligently and for the bottom dollar.

MR. STEIN: May I just raise one or two questions?

I would suggest that for the interest of the city in avoiding this problem of interest after the bonds are voted, which will very well be sizeable considering the amount of the bonds, that consideration be given to authorizing the completion of detailed plans and specifications as early as possible so the construction can get under way, because, as we have had experience with other cities, what happens is that the money is just lying idle and the city is paying for it anyway.

Now, the second point I would like to raise, to come back to something that Mr. Metzler raised, and that is I wonder if your date of March 1, '59, for the acceptance of the revisions of this basic engineering and feasibility report, giving you one year, is necessarily tied with the bond election date of September 1, 1959. I can very well see the point that the City Council may not want the bond election before they stand for their own election. However, I do think that the consideration might be given to pushing up that date so you will have more time to prepare the bond election.

And for Mayor Bartle I might say that I am a lawyer working with engineers all the time and would hate to admit that we lawyers will need as much time to make up our minds on the report as the engineers have to take to digest the report.

MAYOR BARTLE: It doesn't take a lawyer any time to make up his mind, but sometimes these engineers confuse me a little with all of their verbiage. I unfortunately don't understand the

the King's English or Queen's English, as it is now, as well as some of these engineers. These engineering reports confuse me no end. When I get through I wonder what they have told me. And if you have to work with engineers all the time, I will say to you I will put you on my prayer list as an Elder in the church. I think you are entitled to it.

MR. STEIN: Thank you.

MAYOR BARTLE: We do have to have engineers and I wouldn't belittle engineers at all, and when I look at all the money this city appropriates to engineers with great regularity, may I say to you, sir, that it is the lawyers that are starving not the engineers today, let me assure you.

MR. STEIN: No one realizes that more acutely than I do, sir.

MAYOR BARTLE: Well, I am happy that at least I have found a companion.

MR. STEIN: But again I would suggest that the conferees and the city officials might want to give consideration to the reduction of this date of this year period between the submission of the basic engineering and feasibility report and the acceptance by the City Council. I think that if you look at that you will find that your time after that in getting ready for your bond election will be much more valuable after you have done it than before, and if you are putting yourself on a rather tight schedule after the bond election and the award of the contracts I think the same compelling reasons should indicate that you might want to give yourself a rather tight schedule for the acceptance of this feasibility report to give you as much time as you possibly can have to prepare for the bond election. That is just a suggestion.

MAYOR BARTLE: I would say that the Department of Public Health of the State of Missouri and also our sister State of Kansas because we are almost in two states here, you understand, anything that they can do through their facilities to educate the public as to the need I think is very vital in this whole picture. I, for one, labor under the theory that if the City Council would ask the municipality to vote X-millions of dollars for sewage disposal that it would be overwhelmingly defeated. I think it has to be a program of education which does not stem from the City Hall but stems from every nook and corner of the country on the part of citizens who do recognize the problem and realize that something must be done about it.

And anything that either Board of Health can do or the United States Public Health, will help. I think we do have confidence in the Surgeon General's office, I think we have confidence in the U.S. Public Health Service, I think it is the kind of service that people see and recognize, and may I say appreciate, and, hence, any proclamation that can be made or any statements that can be offered or any education that can be carried forward by any agency of government other than the city fathers I think will have much more effect than for any nine members of the City Council to say, "We have got to have X-number of dollars in order that we may handle properly sewage disposal and to take our streams from pollution into fine, clean streams once again."

MR. STEIN: Thank you.

MR. HOPKINS: Mr. Chairman, this matter of the schedule is something that must apply to three communities that are involved in today's conference. I think it would be unwise to reach a--attempt to reach an official decision on the schedule that must come from this conference until after we have heard from the other communities involved here in the conference today.

So I would suggest--

MAYOR BARTLE: What are the communities, may I inquire?

MR. HOPKINS: Kansas City, Kansas, and North Kansas City.

MAYOR BARTLE: Well, I think we are all in the same pot. And I can say to you that the distinguished Mayor of North Kansas City and the very able Mayor of Kansas City, Kansas, and the administration here in the City Hall understand each other perfectly, and if there is to be a time schedule I, for one, would say that if it could be coordinated in such a fashion that the dates would coincide that we could be mutually helpful and beneficial to each other, because then it becomes a community problem instead of a municipal problem. The more that we can talk in terms of the area as the Heart of America area here in which there are no state lines involved I think the better off we will be in trying to whip this whole problem.

MR. HOPKINS: It is visualized, Mayor Bartle, that whatever schedule is adopted from this conference would apply equally to the three communities. That is the reason for my suggestions that we defer further thought to a schedule at this time until after the other cities have been heard from.

MR. STEIN: Thank you.

MAYOR BARTLE: I have not talked to the Honorable Mr. Scharz or the Honorable Mr. Mitchum relative to schedules. We have on several occasions talked about the mutual problem which confronts all three municipalities. And it is a major problem.

MR. HOPKINS: Yes, sir.

MR. STEIN: Are there any further questions or comments?

Thank you, Mayor Bartle, for an excellent statement, and Mr. McKinley and Major Kelly. We certainly appreciated your coming here and your remarks have been very helpful.

MAYOR BARTLE: I shall be like General MacArthur, I shall return, but I am committed to go.

MR. STEIN: I would like to say we would like to have you come here if your schedule permits any time during the day and sit in and see how we are progressing.

MAYOR BARTLE: Thank you, sir. And I appreciate it immensely. And when I am gone my own fifth columnists are here.

MR. STEIN: Yes, sir. Thank you.

May we again resume the regular agenda and call upon Mr. Glen Hopkins for a general presentation of the pollution problem in this area.

Mr. Hopkins.

MR. HOPKINS: Mr. Chairman. The presentation of the Public Health Service with regard to its interest in pollution in this area, its recommendations, will be made by the Assistant Regional Engineer in charge of our water supply and water pollution control program, Mr. Leonard Dworsky.

MR. DWORSKY: Mr. Chairman, members of the conference.

In the vally of the Nation's longest river, the Missouri, there is in progress a vast water and land resources development program. It is the largest undertaking of its kind in history, involving one-sixth of the nation's land area. The multibillion dollar plan for controlling and using its waters is already yielding benefits for flood control, municipal and industrial water supply, irrigation, electric power, soil conservation, and navigation. Important gains, with greater future potential, have been made in the development of business and industrial growth, fish and wildlife, recreation, and forest and mineral resources.

The control of water pollution is an important and critical part of the development program. The value of the Basin's water resources not only depends upon having the water available where it is needed, when needed, but also on its degree of cleanliness. The key to complete realization of the Basin's potential depends on the ability of its people to control water pollution. Clean waters will protect advances already achieved and open a wide field of resources that are virtually untouched.

The problems involved in coping with pollution from a particular area are not isolated ones. The Missouri in its 2500-mile journey has many streams, small and large, tributary to it. It also serves as a major tributary to the Mississippi River at its discharge point at St. Louis, Missouri. The effects of pollution from a given pollution source are far-reaching downstream.

While this statement is necessarily concerned with the problem of pollution from the Kansas Cities and the resulting downstream effects, similar statements and data have been presented at two previous conferences (St. Joseph, Missouri, June 11, 1957; Omaha, Nebraska, June 14, 1957). Together, the several statements indicate the full extent and interrelationship of the pollution problem in the Missouri River from Yankton, South Dakota, to St. Louis, Mo.

Below the Kansas Cities, some 1,500,000 people use the Missouri River as a source of drinking water. Each day 230 million gallons of Missouri River water are used in Lexington, Glasgow, Boonville, Jefferson City, St. Louis City, St. Louis County, and St. Charles, Missouri.

Physical, chemical and biological pollution in the form of oils, grease, fecal solids, bacteria, organic chemicals and similar substances constitute a danger to the public health of the communities and individuals taking water for drinking purposes from the Missouri River. Removal of settleable and floating solids and virtual removal of toxic substances and material interfering with water treatment processes are considered the minimum acceptable treatment agreed to by the State Sanitary Engineers of the five State Health Departments of the Lower Missouri Basin at a conference in Omaha, Nebraska, on September 13, 1953.

With increasing population and industrialization, the need for controlling pollution to provide potable water supplies becomes more emphatic.

The gross contamination of the Missouri River has created other problems involving water use; by navigation interests in increased operation and maintenance costs of floating and fixed equipment and navigation aids; by industry in increased costs for treating water, in greater maintenance of boilers, condensers, process or other equipment; by municipalities in greater costs for treating water; by commercial fishermen through loss of catches due to obnoxious taste and to loss resulting from inability to realize the full fishery potential of the river; and by industrial development interests as a result of lowering the desirability of industrial sites near water.

Recreational opportunities are becoming increasingly important. The development of improved recreational facilities for campers, fishermen, hunters, boaters, and sightseers can now be accomplished since the Missouri has become a controlled river. However, such conditions as oil slicks, intense odors, and other pollutants in the river below the Kansas Cities make the development of such facilities impossible.

Complete utilization of the Missouri cannot be realized until pollution contributed by communities and industries along its banks is controlled. Because of the interstate nature of the Missouri River, numerous studies and reports have been made over an extended period by the States and Federal Government. Their purpose has been to point out the problem and prepare for remedial action.

The interstate effects of pollution in the Missouri River, were identified as early as May, 1913, in a report, "Sewage Pollution of Interstate and International Waters--The Missouri River from Sioux City to Its Mouth," by Dr. Allan J. McLaughlin (Hygienic Laboratory - Bulletin No. 89). Through the years 1913 to 1948 the Lower Missouri concerned health officials of the States as well as the Federal Government.

In 1948, the Congress, cognizant of the health and welfare problems created by increasing pollution of the nation's waterways, established a cooperative pollution control program between State water pollution control agencies and the Public Health Service. Under this program the Public Health Service and the five States in the Lower Missouri - South Dakota, Iowa, Nebraska, Kansas, and Missouri - cooperated in extensive investigations and reports of pollution conditions in the Missouri from the Junction of the Niobrara River, South Dakota, to St. Louis, Missouri. A report titled, "Lower Missouri River Basin, Water Pollution Investigation, October 1953," (Public Health Service Publication No. 269), outlined the pollution problem and suggested courses of action for cities, states, industries, and others to control this long-standing dangerous situation.

This report showed that untreated wastes from 543,000 people were discharged from the Kansas Cities and associated communities in the metropolitan area. The heavy industrial concentration in the area was reported as contributing a pollution load equivalent to that from 1,287,000 people. While Kansas City, Kansas, discharges its wastes principally to the Kansas River, Kansas City, Missouri, discharges wastes to the Kansas River, to the main stem of the Missouri River, and to the Blue River a short distance from its confluence with the Missouri. North Kansas City, Missouri, discharges its wastes to the main stem of the Missouri River or to tributaries near their confluence with the Missouri. The report also discussed the potential health hazard encountered by water plants below Kansas City because of high bacteriological pollution, and recommended treatment of wastes discharged by cities and industries.

In July 1953, the Surgeon General of the Public Health Service, under authority of the Federal Water Pollution Control Act, formally adopted a "Comprehensive Program for Control of Water Pollution - Missouri Drainage Basin" (P.H.S. Publication No. 317).

The report, a joint effort of the ten Basin States and the Public Health Service, noted the interstate nature of pollution along the main stem of the Missouri River and recommended treatment of wastes at the Kansas Cities and their environs and other communities and industries discharging to the main stem.

Two reports, "Evaluation of Interstate Pollution, Lower Missouri Sub-Basin, State of Kansas" and "State of Missouri" were prepared by the Public Health Service and approved by the State water pollution control agencies of Kansas and Missouri in August, 1953. The purpose of these reports was to provide a common basis of understanding between the State and Federal Government on factors relating to the pollution problem in the Lower Missouri River. Those responsible for discharging untreated wastes in the Kansas City area were noted and both Departments of Health were asked by the Chief, Division of Water Pollution Control, Public Health Service, in letters dated February 26, 1954, to take action to secure treatments of wastes discharged to the Missouri River.

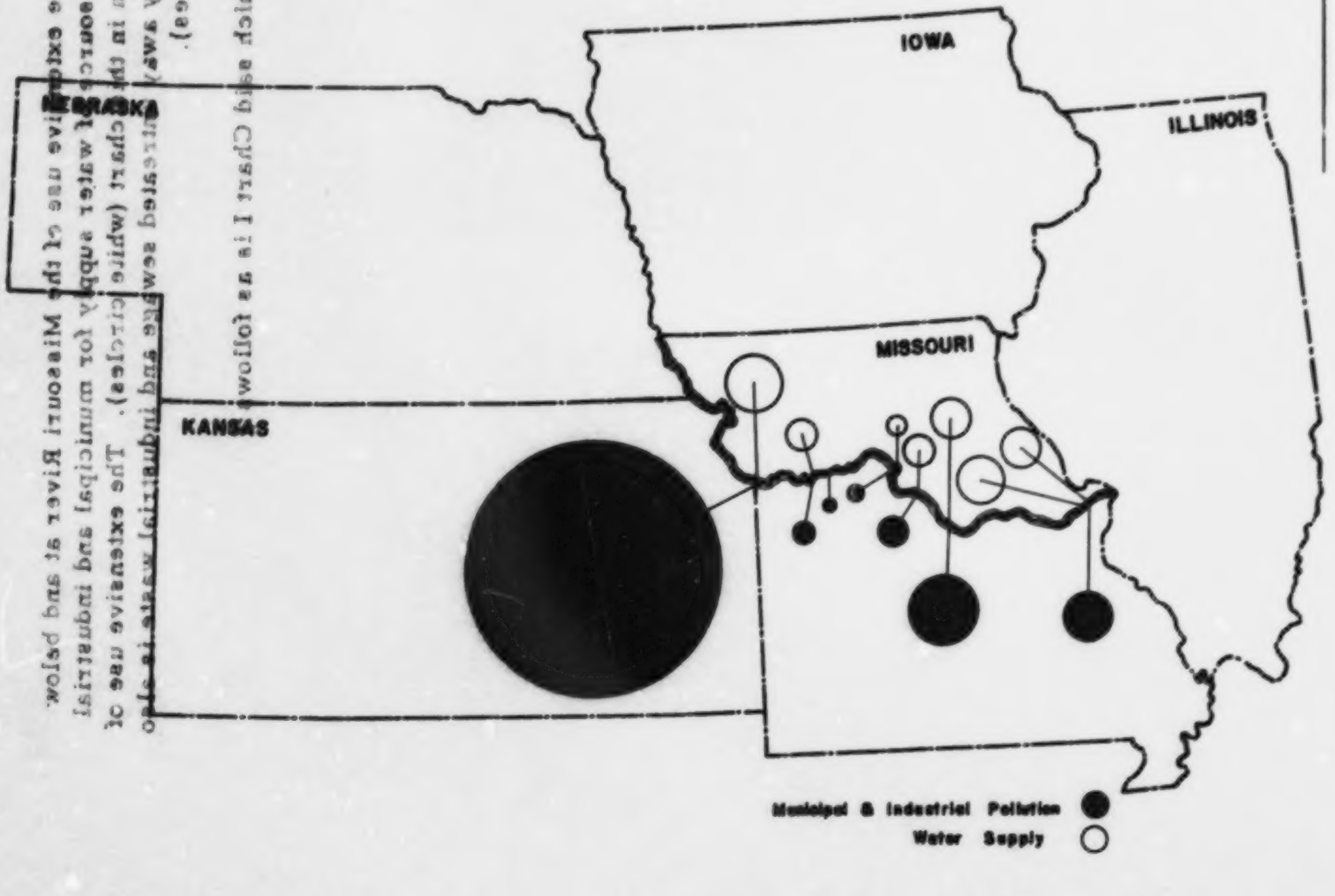
Following a series of meetings between the five States in the Lower Missouri Basin and the Public Health Service, a "Uniform State Program" outlining steps to abate interstate pollution was adopted by the States in November, 1953. Progress reports have been submitted periodically to the Public Health Service, the most recent of which indicates that Kansas City, Kansas, has voted $3,700,000 for the construction of interceptor sewers and the purchase of sewage treatment plant sites. An engineering report outlining the method of collecting all of the sewage and treating it at one point was completed and approved by the Kansas State Board of Health on June 30, 1957. Kansas City, Kansas, is to have plans for a sewage treatment plant completed and a contract let for construction by January 1, 1960, under terms of the Kansas River Basin pollution abatement policy. Kansas City, Missouri, has retained engineers for the purpose of preparing a report on sewers, interceptors, and sewage treatment for the city. North Kansas City has ordered the preparation of detailed plans and specifications for treatment facilities. Interim treatment facilities have been provided by many of the newer developments in the urban area. Most of the smaller communities have built or are in the process of constructing treatment facilities. Some of the major industries in the metropolitan area have taken steps to reduce pollution through process revision or "in-plant" good housekeeping procedures.

While the pollution contributed by the Kansas City area is of immediate concern, related pollution placed into the river from communities and industries above this area results in residual pollution immediately above Kansas City. This residual pollution, added to that coming from the Kansas Cities and below, constitutes the total pollution affecting the health and welfare of people downstream. The residual of pollution originating in the Kansas City area and prevailing at the mouth of the Missouri River, is discharged into the Mississippi River, another interstate stream.

CHART I

THE MISSOURI -

BASIC TO PUBLIC HEALTH


IOWA
ILLINOIS
NEBRASKA
MISSOURI
KANSAS
● Municipal & Industrial Pollution
○ Water Supply

27B

Mr. Chairman, I would like to present a series of charts which will indicate some of the more important aspects of the pollution problem and show a number of findings of our several surveys.

Chart I

The extensive use of the Missouri River at and below Kansas City as a source of water supply for municipal and industrial purposes is shown in this chart (white circles). The extensive use of the River to carry away untreated sewage and industrial waste is also shown (dark circles).

(Which said Chart I is as follows:)

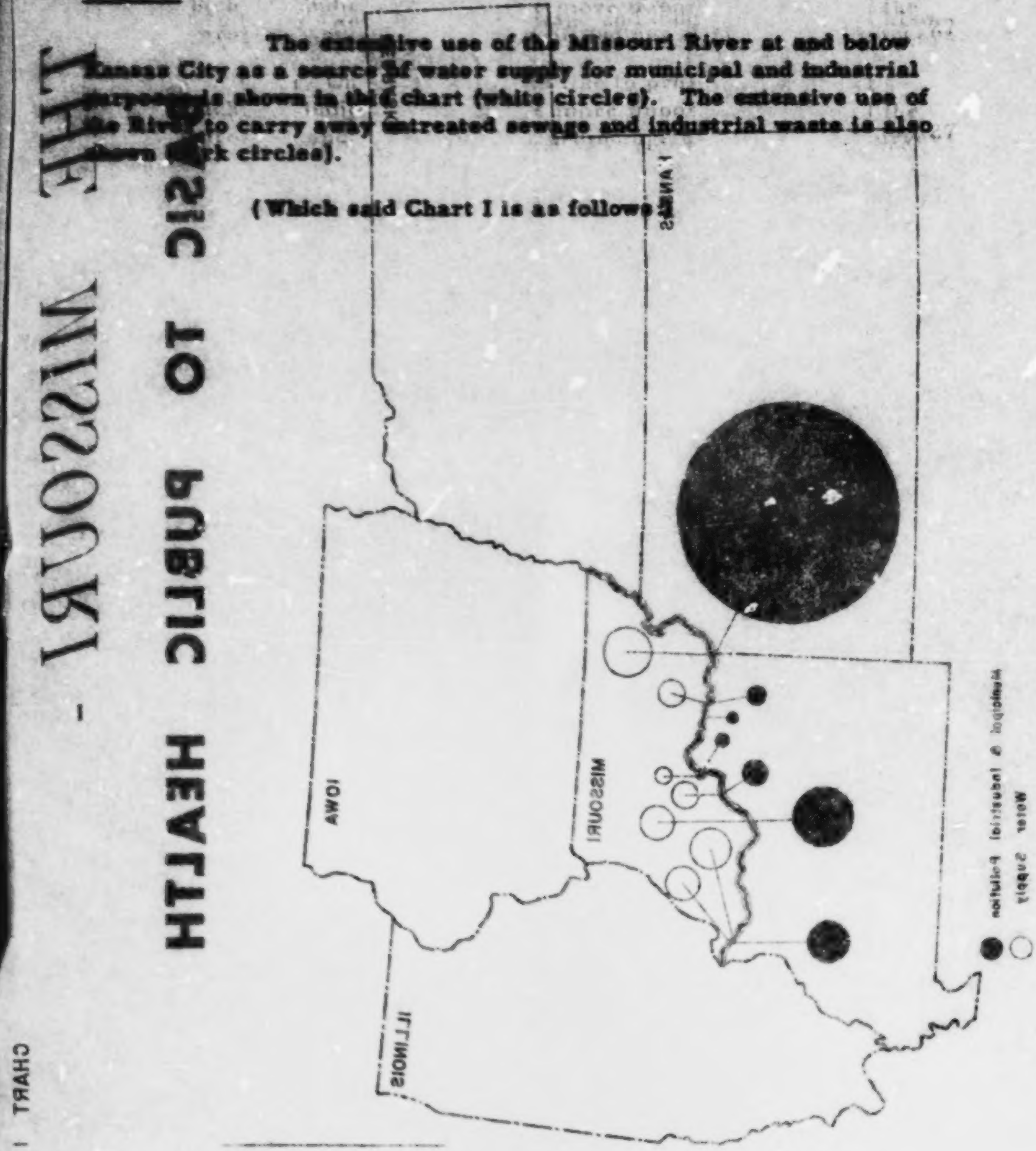

THE MISSOURI - BASIC TO PUBLIC HEALTH
KANSAS
IOWA
MISSOURI
ILLINOIS
Municipal & Industrial Pollution
Water Supply
CHART I

Chart II

The graphs on this chart show the average monthly density of coliform bacteria from 1955 to the present time at the municipal water intakes of Kansas City, Kansas; Lexington, Boonville and St. Louis County, Missouri.

Coliform bacteria serve as indicators of pollution. A raw water coliform density of 5,000 organisms per 100 ml. up to 10,000 organisms per 100 ml. is generally considered the maximum permissible to produce a healthful water supply using reasonable and economical water treatment methods. While water treatment plants can, and do, treat waters containing greater quantities of coliform bacteria, the absence of disease should not create a false sense of safety about the quality of the Missouri River as a source of supply. Dependence must not be placed solely upon water treatment processes, and particularly chlorination, to produce a safe water supply from a highly polluted source. Reducing pollution in the Missouri River consistent with the uses of the river is the basic safeguard.

The graph indicates that pollution has greatly exceeded these tolerances at all water supply intakes. Bacteriological pollution is usually most critical during the summer period. Degradation of water quality continues to St. Louis, however, the highest levels occur in the River stretch between Kansas City and Boonville.

The highest average monthly coliform bacteria concentration was 360,000 per 100 ml. for October, 1957, at Lexington and 230,000 per 100 ml. for July, 1957, at Boonville.

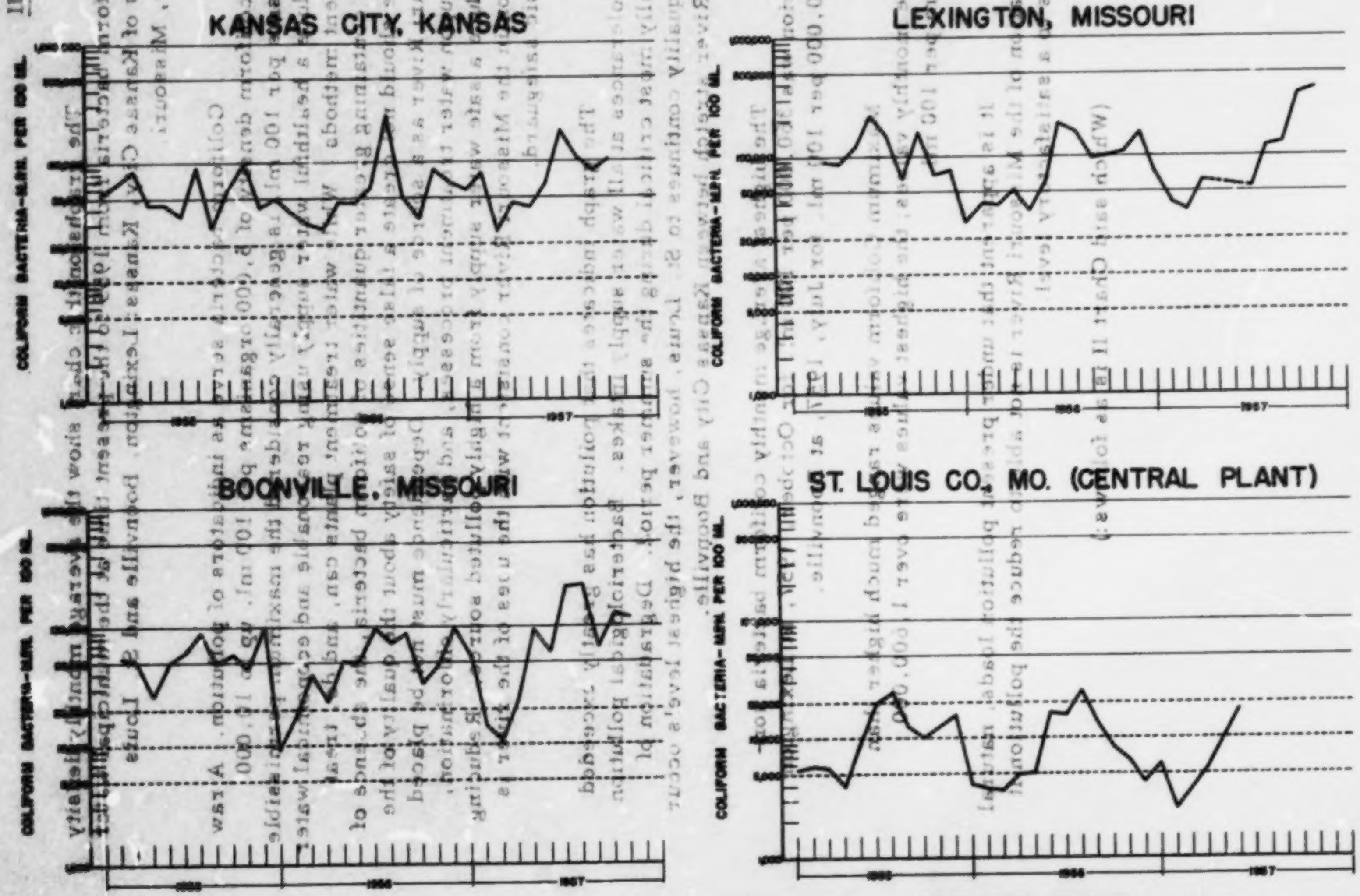
Maximum Coliform values ranged much higher than average monthly values; the highest values were over 1,600,000 coliform per 100 ml.

It is apparent that under present pollution loads, natural purification of the Missouri River is not able to reduce the pollution it carries to a satisfactory level.

(Which said Chart II is as follows:)

CHART II

BACTERIOLOGICAL POLLUTION CRITICAL DURING SUMMER MONTHS



MISSOURI RIVER WATER QUALITY SURVEY
BACTERIOLOGICAL INVESTIGATIONS
AT WATER INTAKES
AVERAGE MONTHLY COLIFORM DENSITIES

In addition to bacteriological pollution, problems of chemical and physical pollution have become more intense from 1955 to the present time. Serious complaints have been received about floating grease, oils, and other chemicals affecting water treatment facilities. It must be realized that pollutional conditions as represented by coliform bacteria are less severe at water intakes than at points between principal cities. While this fact suggests that water plants have the most favorable locations under the circumstances, it also points out that pollutional damages to uses other than water supply may be considerably greater than can be measured by treatment problems posed at various municipal water plants.

As a result of the investigations and studies made over several years, and in the light of complaints, information, and other data in the files of the Public Health Service, it is evident that pollution exists in the Lower Missouri River. The effects of this pollution are detrimental to the reasonable uses of the waters of the Missouri River for municipal and industrial water supply purposes, commercial fishing, recreational fishing, boating, and other recreational pursuits.

That concludes my statement, Mr. Chairman.

MR. STEIN: Thank you.

Do you have anything further?

MR. HAPPY: Yes

MR. STEIN: Are there any comments or questions from the conferees on this statement?

MR. METZLER: I think not at this time.

MR. STEIN: Mr. Happy?

MR. HAPPY: None.

MR. STEIN: Then at this point I suggest we may push on to the next point of the agenda, dealing with the occurrence of pollution in interstate waters and specifically covering sources of pollution, the nature of wastes, and the effects of the pollution on present and potential water uses.

I should like to call on Mr. Albert W. Happy, of Missouri, for a statement at this time.

MR. HAPPY: Mr. Chairman, I shall ask Mr. Jack K. Smith, of the Division of Health, to present the statement for our agency in regard to the occurrence of pollution.

MR. STEIN: Thank you Mr. Happy.

Mr. Smith.

MR. SMITH: Mr. Chairman.

The Missouri Division of Health has been active in the field of water pollution control for the past three decades. In the past the Division has been limited to the investigation and control of water pollution as it affects public health and the sources of public water supplies. In carrying out this purpose the Division has been successful in protecting water resources for many other water uses, such as industrial, recreational, wildlife and agricultural. The Division has operated under the general provisions of the Statutes of Missouri presently described under Section 192.020 and Section 102.200, Revised Statutes of Missouri, 1949, and under regulatory authority vested in the Division. Because of the broad responsibilities of the Division in the water pollution control field, this agency was designated as the official water pollution control agency for the State of Missouri by gubernatorial proclamation in 1948.

The Division has conducted water pollution control activities in cooperation with the U. S. Public Health Service and adjoining states under the Federal Water Pollution Control Act of 1948. In this connection cooperative studies of pollution sources were made and combined with pollution investigations conducted by water pollution agencies in adjoing states. Findings were reported in "A cooperative State-Federal Report on Water Pollution, Lower Missouri River Basin Water Pollution Investigation", October, 1952. This Report was followed by "A Comprehensive Program for the Control of Water Pollution in the Missouri Drainage Basin" published in July, 1953. The Division of Health has attempted, through the process of inspection, reporting and encouraging construction of abatement works, to carry out this program for the control of water pollution. The cooperative approach to the abatement of water pollution has been very successful with the result that all but a few municipalities have provided treatment as outlined in the control program. The cities which have not as yet provided treatment are located for the most part on the Missouri and Mississippi Rivers. The abatement of the pollution in carrying out the recommendations contained in the 1953 program is approximately 75 percent complete when considered as the number of sources.

Abatement on the main stem of the Missouri River has not progressed as rapidly as has abatement of pollution on tributary streams. While some preliminary planning for abatement structures on the main stem has been accomplished, no abatement works on the Missouri River have been completed.

In connection with the occurrence of pollution of interstate waters in the Kansas City Area, data published in the Lower Missouri River Basin Water Pollution Investigation, October, 1952, has been revised to reflect current findings regarding pollution of the Kansas River, the Missouri River, both of which are interstate streams, and the Big Blue River, a tributary to the Missouri.

Raw sewage collected within the present corporate limits of Kansas City, Missouri, is discharged to each of the above streams. The approximate sewered population within the corporate limits of Kansas City, Missouri, is estimated to be 479,000. In addition, industrial wastes of approximately 300,000 population equivalents contribute to the municipal sewerage system, making a total contributed population discharging sewage to the water course of 779,000. Of this 779,000, 290,000 population equivalents discharge to the Kansas River, 114,000 population equivalents discharge to the Missouri River, and 365,000 population equivalents discharge to the Big Blue River. The above figures include that sewage contributed by Kansas City North.

North Kansas City, Missouri, contributes domestic sewage from 6,200 persons and industrial wastes having a population equivalent of 77,300 for a total population equivalent of untreated wastes to the Missouri River of 84,500.

In addition, several industries discharge industrial wastes, for the most part organic in nature, directly to the Missouri or Big Blue Rivers. The Missouri River receives a discharge population equivalent of 75,800 from this source and the Big Blue River receives a discharge population equivalent of 75,300.

The total population equivalent discharged to interstate waters from that portion of the Kansas City Area located within the State of Missouri is now estimated to be 1,013,600. Additional sewerage systems serving subdivisions in Platte, Clay and Jackson counties have not been included in the above figure. This additional source of waste consists entirely of treated plant effluent and will not materially affect pollution of interstate waters. These sources are mentioned because a great majority of the operating sewage treatment plants are located in areas proposed for annexation by Kansas City, Missouri. It is anticipated that trunk sewers will be extended and the treatment facilities abandoned when annexation becomes effective. These sewered areas must necessarily be considered from a standpoint of the potential effect of raw sewage discharged to the Kansas, Missouri, and Big Blue Rivers. Population studies indicate that an additional 40,000 persons will be contributing to the Kansas City, Missouri, sewerage system in 1960.

Taste and odor problems have been experienced for many years at water plants using the Missouri River below the Kansas City Area as a source of raw water supply. The problems have been particularly accentuated since 1938. With the low flows occurring during winter months, taste and odor problems at water plants were a serious menace to operation during the winter of 1955 and 1956. During November and

December of these years it was necessary for the water plants at Lexington, Glasgow, Boonville, Jefferson City, and St. Louis County to shut off pumping operations from the river to allow heavily polluted water to pass the water intakes. However, water plants cannot maintain services if river pumps are cut off for more than three to ten hours. During periods of low flow, it has been increasingly necessary to provide for the application of additional chemicals in the treatment process.

The populations listed in Revised Table 10 have been taken from estimates prepared by the Bureau of Vital Statistics, Division of Health of Missouri, and population equivalents assigned industry in both Table 9 and Table 10 have been computed from comparisons of plant operation with published studies for similar plants. No excessive waste discharges which might result from poor housekeeping or inadequate control of processing by industry have been considered. The figures quoted in Table 9 and Table 10 are believed to be average and undoubtedly are exceeded on many occasions. In considering approval of plans and specifications for abatement works, the Division of Health will require the collection and analysis of sewage or industrial waste samples under several conditions of plant operation and waste flow.

(Which said Table 9 and Table 10 are as follows:)

That completes our statement.

MR. STEIN: Thank you, Mr. Smith.

Mr. Happy, do you have any additional statement on that point that you can make?

MR. HAPPY: No, I have no additional statement.

MR. STEIN: Are there any comments from the conferees on the statement made by Mr. Smith?

Would you like to call on anyone else for the support of the statement?

MR. HAPPY: Yes, Mr. Chairman, I should like to call upon Colonel Laurion, the District Engineer of the Kansas City District, to present a statement for the U. S. Army Corps of Engineers.

COLONEL LAURION: Mr. Chairman, members of the panel, ladies and gentlemen:

I am Colonel L. E. Laurion, the District Engineer of the U. S. Army Engineer District, Kansas City, and I am representing Major General Gerald Galloway, the Division Engineer of the U. S. Army Engineer Division, Missouri River.

Excessive pollution of the waters of the Missouri River is directly harmful to some of the works of the Corps of Engineers. The presence of sewage and industrial waste has adverse effects on the maintenance and operation of river boats, and on health conditions affecting construction workers, barge line crews, and other persons who use the river.

The discharge of oil and other refinery or chemical wastes into the river has created problems in vessel power-plant operation by clogging of equipment and increasing general maintenance requirements. The cost of such additional work when added to increased out-of-service time is serious. Only this year, it was necessary to repair filter equipment on one of our dredge boats after a short period of oil pollution. Sanitary wastes and other matter which preclude the general use of river water without extensive treatment make tow-boat and construction operations more costly and hazardous from the standpoint of working conditions. Although most of the Corps of Engineers boats and bases are equipped for ordinary treatment of water, it is not practicable to provide facilities adequate to cope with conditions created by unrestricted pollution.

In recent years the concentration of corrosive substances in the river has increased, particularly below Kansas City. This has resulted in a substantial reduction in the life of steel plates forming barge and tow-boat hulls and has increased maintenance costs accordingly.

The factors which result in pollution losses to the larger vessels and barges apply with proportionally greater weight to recreational boating. Although, at present, the total loss to recreation interests is apparently well below the losses to commercial operators, the increase in interest by small boat owners indicates that this may be an item of considerable importance in the not too distant future. From a health standpoint, the interests of small boat operators are important as a public responsibility, since the owners are not equipped as individuals to protect their interests.

The Corps of Engineers offices at Omaha and Kansas City maintain liaison with operators of waterworks, power plants, and others who have river intakes. During the low-water period in non-navigation seasons, the operators are furnished forecasts of flows and are encouraged to report any serious or potentially serious situations. With the cooperation of the U. S. Public Health Service, it has been possible to predict the movement of "slugs" of highly polluted water and to schedule operation of plants so as to minimize harmful effects. The elimination or reduction of such occurrences would reduce operational costs to Federal agencies in addition to the obvious benefits to individual plants.

The Annual Operating Plans for the Missouri River main stem reservoirs since August 1956 have provided, on an interim emergency basis, for supplemental winter releases to help alleviate serious taste and odor conditions on the lower Missouri River. It was agreed, however, that such supplementary releases would be made only for an interim period consistent with reasonable progress on industrial waste control and urban sewage treatment works. These supplemental releases were agreed to with the understanding that they would not be needed for a period exceeding three to five years.

As a matter of general policy, as well as in the specific case of operation of the Missouri River main stem reservoirs, the Corps of Engineers considers that low flow regulation for sewage dilution should not be used as a substitute for treatment works.

Thank you.

MR. STEIN: Thank you.

Mr. Happy?

MR. HAPPY: Mr. Chairman, I should ask Mr. P. Barnickol, representing the Missouri Conservation Commission, to present the statement from that agency in regard to the occurrence and effects of pollution.

Mr. Barnickol.

MR. P. BARNICKOL: Mr. Chairman and ladies and gentlemen.

As Mr. Happy has indicated, I am P. G. Barnickol and I represent the Missouri Conservation Commission. I shall read a statement prepared relative to this occasion, the statement prepared in the Conservation Commission offices relative to pollution in the Missouri River and downstream from Kansas City.

The first record made by the Conservation Commission relative to pollution in the Missouri River downstream from Kansas City dates back to 1937, the year this department was organized. This record was made by the Commission's game biologist who observed oil on the river while conducting an aerial census of waterfowl. Since then numerous reports of a variety of kinds of pollution have been made by the Commission's technical and law enforcement men. Beyond these, there have been numerous communications from hunters, sport fishermen and commercial fishermen protesting the contaminated condition of the Missouri in and downstream from the Kansas City area.

Pollution in this area has been observed consistently during routine aerial censusing of waterfowl which has been conducted at frequent intervals during each fall waterfowl migration since 1937. After 1945, oil slicks became continuous in the immediate area of Kansas City and on frequent occasions were seen as far as Missouri City about 26 miles downstream. By 1954 oil was observed at times as far as Wellington, 50 miles downstream. Within the last three years, it has been seen regularly as far as Napoleon, which is 44 miles below Kansas City, and occasionally as far as Waverly, 80 miles downstream.

Based upon frequent observations of waterfowl movement, we believe that contamination by oil has seriously diminished the use of the river by waterfowl particularly between Kansas City and Wellington. Waterfowl specialists report few birds in this reach of the river, and they have observed ducks unable to fly because their feathers had become saturated with oil. Over a 20 year span of their observations, these men believe that the Missouri River for a distance of at least 50 miles below Kansas City has gradually deteriorated as waterfowl habitat. This section of the River lies within an important segment of the mid-continent waterfowl flyway, and in the past has been very important in satisfying the needs of Kansas City sportsmen. In view of this and of increasing hunting pressure in recent years this is a matter of vital concern.

The effect of this pollution upon the fishery is of equal importance, and our observations since the late 1930's show an increase both in quantity and kind of contamination. State-wide surveys including the Missouri and Blue Rivers were made in 1940 and again in 1949, and numerous separate incidents of pollution in the Kansas City area have been investigated during our acquaintance with the problem. These investigations reveal that sewage, and industrial wastes enter directly into the Missouri River, and that the Big Blue River which empties into the Missouri at Kansas City carries a particularly heavy load of industrial and sanitary wastes. Industrial wastes enter the river at North Kansas City, Kansas City, and Sugar Creek, Missouri and at Kansas City, Kansas, and our investigations indicate further that industrial and sanitary wastes enter the Missouri via the Kansas River whose confluence with the Missouri also is located within the Kansas City area.

Although all sources of pollution probably have not been detected and evaluated during the Commission' s investigations, we believe that sanitary wastes which occur in great volume consist principally of untreated sewage, but that industrial pollutants are of a variety of types. So far as our work shows, these include oil, creosote, tar, acids, bases, emulsified oil and other wastes associated with the processing or manufacture of petroleum and metal products, paint, black-top road surfacing material, concrete, roofing material, grain products, fiber glass insulation and wood products. In view of the habitat requirements for fish, waterfowl and other aquatic life, the combined pollution entering the Missouri River in this area represents a formidable load even for a stream with the large volume of flow characteristic of the Missouri.

This has a marked effect upon the fishery of the Missouri River. In the ten years since 1947, the number of licensed commercial fishermen in Clay, Jackson, Ray and Lafayette Counties, which border the river downstream from Kansas City, has decreased by 62 percent. Similarly the number of permits to operate hoopnets, which are used extensively in commercial fishing, has decreased in a like amount over the same period in this four county area. This decline in fishing effort is brought about by a foreign taste and odor in fish flesh which renders the product unfit for market and by a reported deterioration in the quantity of fish. We believe that the taste and odor condition results from oil and from phenols contained in certain wastes which are discharged in the Kansas City area. At times the taste and odor problem is reported as far downstream as Boonville, a distance of 180 miles. Within the Kansas City area and for 56 miles downstream, we are told that this condition prevails virtually the year around.

Nineteen reports protesting the polluted condition of the river have been filed by commercial fishermen. Eighteen of them report oil in the river and the presence of an oily or phenolic flavor in fish. These reports came not alone from within the immediate Kansas City area but from Missouri City, Sibley, Lexington, Glasgow and Boonville.

This situation is recognised with equal concern by sport fishermen in Kansas City and downstream communities. Some of these people have filed protests, while others along with hunters have formed an action group to seek means of pollution abatement.

Contamination of the Missouri River resulting from the discharge of various wastes in the Kansas City area has had a direct and degrading effect upon fish and upon fish and waterfowl habitat. This has brought about a marked decline in the use of the river for hunting and for sport and commercial fishing. These uses of the river represent a public right - a right which is denied by the present polluted condition of this stream.

Thank you sir.

MR. STEIN: Thank you, Mr. Barnickol.

Mr. Happy.

MR. HAPPY: Mr. Chairman, I should like to ask Mr. Herbert L. Hartung, representing the St. Louis County Water Company, to present a statement from that organization in regard to the effect of pollution.

MR. HARTUNG: Mr. Chairman.

I am Herbert L. Hartung, Sanitary Engineer and Superintendent of Production at the St. Louis County Water Company, St. Louis County, Missouri. The principal address of the St. Louis County Water Company is 8390 Delmar, University City 24, Missouri.

The St. Louis County Water Company is a privately owned public water utility, supplying an average 50 million gallons per day of drinking water to over 500,000 people who reside in St. Louis County. These people live in a 200 square mile area, west, south and north of the City of St. Louis. This territory served by the St. Louis County Water Company is a growing area and is already about three times the area of the City of St. Louis.

The St. Louis County Water Company operates three water purification plants and river intake stations. The North County Plant of the St. Louis County Water Company is at mile 20.5 on the Missouri River and has a capacity of 36 million gallons per day. The Central County Plant is at mile 36 on the Missouri River and has a capacity of 85 million gallons per day. The South County Plant with a capacity of 15 million gallons per day is on the Meramec River near Fenton, Missouri, and is not included in the following statements made to this conference.

The St. Louis County Water Company over the past several years has been observing and noting with growing concern the increasing amount of pollution in the Missouri River water. If this pollution continues to increase, the quality of the drinking water of the people in St. Louis County will be seriously impaired and endangered. Although the St. Louis County Water Company has been able to deliver to its customers a safe and suitable water during the past few years, such has only been possible because of added methods, efforts and cost in the water purification plants. This company has no assurance that its existing water plants can satisfactorily process Missouri River Water in the future unless pollution abatement becomes a reality.

The growing concern of the St. Louis County Water Company regarding pollution in the Missouri River is more with pollution which causes the water to be unpalatable and chemically unhealthful than with bacterial pollution. However, the extent of bacterial pollution in the Missouri River is also important to the St. Louis County Water Company.

The bacterial pollution in the Missouri River at St. Louis County continues to be as in previous years, an appalling high quantity. During the calendar year, 1956, the maximum coliform count exceeded 50,000 per 100 ml., and the yearly average was 10,000 per 100 ml. These bacterial counts are somewhat less than reported from upstream points on the Missouri River, but nevertheless exceed that quantity which is considered permissible according to U.S.P.H.S. standards. To safeguard the water supply of St. Louis County against this bacterial pollution, the water is chlorinated two and three times and, chlorine residuals leaving the plants are between 1.5 ppm and 2.0 ppm.

During the past three years, pollution which causes taste and odor in drinking water has become increasingly objectionable. Beginning in 1955, for 50 and 60 days each year, the pollution in the river was sufficient to cause difficult taste and odor treatment problems in the purification plant. During the preceding three years, 1952, 1953, and 1954, taste and odor problems were encountered for only an average 10 days per year, or about 1/5 as many times as during the last three years. During 1955, 1956 and 1957, 150,000 pounds more chlorine and 30,000 pounds more activated carbon were used than during the preceding three years for removing these troublesome tastes and odors. This increased use of chlorine and carbon is an indication of the extent of the increased pollution in the Missouri River water.

The control of the water purification plant processing now requires more frequent sampling of the river water and more laboratory testing than in years prior to about 1954-'55. The St. Louis County Water

Company has had to increase its Laboratory personnel to enable more frequent checking for river water changes and on purification processing.

Another indication of this Company's growing concern with the pollution in the Missouri River and its effect on public water supply, is its participation, along with others, in a newly organized, continual organic pollution monitoring program, utilizing the carbon filter - chloroform extraction techniques developed by the United States Public Health Service. Although such monitoring requires considerable time, skill and equipment, the amount of pollution now in the river water and its effect on drinking water quality makes it necessary that the river be continually monitored and checked for changes, variations and for quantity of pollution.

I have here a sample of organic material removed from the finished drinking water supply in St. Louis County and from the finished drinking water in Lexington, Missouri, by this carbon filter procedure. This material was extracted, in each case, from about 2,000 to 3,000 gallons of water. Water Treatment processing as now practiced at these plants or for that matter at any other Missouri River water treatment plant with which I have familiarity, will not remove such pollution. To those of you who are interested, I invite a cautious smelling. I strongly advise that you do not taste the material, because one member of our laboratory staff became ill when he experimented by tasting. If this type of pollution increases in quantity in the Missouri River, the use of the Missouri River for public water supply will become dangerously impaired.

I have been authorized to report that the Missouri Water Company at Lexington, Missouri, a subsidiary Company of the St. Louis County Water Company, located at mile 321 on the Missouri River, 57 miles downstream from Kansas City, has had many problems with pollution which affected the quality of the water reaching the consumer. Grease, foam and other pollution has been visible on the water treatment plant basins and has caused important water plant operating difficulties.

The Missouri Water Company at Independence, Missouri, also a subsidiary company of the St. Louis County Water Company, constructed in 1956, a new water treatment plant at Liberty Bend, Mile 361 on the Missouri River, approximately 17 miles downstream from Kansas City's Main Street Wharf. The source of supply for this water treatment plant is wells, although the Missouri River with its abundant quantity of water flows by the plant property. Studies and investigations made in 1955 determined that the pollution in the Missouri River at this point was already in excess of that allowable for a safe water supply, which made necessary the drilling of wells.

The St. Louis County Water Company does not know the source or the sources of the troublesome pollution in the Missouri River. Upon verbal inquiry to other water plant operators between Kansas City and St. Louis County, it has been determined that water supplies, others than the St. Louis County Water Company and the Missouri Water Company, downstream from Kansas City are also having from time to time taste and odor difficulties similar to those at St. Louis County.

The St. Louis County Water Company would like to emphasize that pollution parameters, in addition to B. O. D., C. O. D. and coliform count, are necessary in a pollution abatement program. Pollution of the type not measured by B.O.D., C. O. D. and coliform count must also be eliminated from the Missouri River water, in order to keep this water safe and palatable.

This statement concerning pollution in the Missouri River water and its effect on the St. Louis County Water Company's supply is presented to you as State and Public Health officials with recommendation for remedial action, as provided for by law and in the interest of the society in which we live.

MR. HAPPY: That completes the statements as the result of invitations from the Missouri Division of Health.

MR. STEIN: Thank you.

At this point, I should like to ask the conferees if they have any comments or questions on the statements of Colonel Laurion, Mr. Barnickol, and Mr. Hartung.

Mr. Metzler?

MR. METZLER: I was interested in the comments of Mr. Barnickol about this oil pollution downstream. He testified that, or reported that, oil had been seen frequently 40 miles downstream and occasionally 80 miles downstream. I would be interested in the amount of in oil pollution. Is this enough to cause a rainbow on the water? Is this a heavy pollution? What is the nature of this that shows up on rivers as large as the Missouri River and 40 miles downstream?

MR. BARNICKOL: Those observations are made on our waterfowl census flights and they observed them as oil slicks, so-called, on the water, observed them from the air. They tell me, I have not seen them personally, but they tell me that they are very clearly evident.

MR. METZLER: These were seen while flying over in a plane?

MR. BARNICKOL: Yes.

Does that answer your question?

MR. METZLER: That does answer the question.

MR. STEIN: Are there any other questions or comments?

MR. HOPKINS: None by the Public Health Service.

MR. STEIN: There is one point I would like to raise with Mr. Hartung, and this is just for emphasis.

Do I understand correctly that the material shown in those bottles was taken from water as it came from the faucets in people's houses and after the water had gone through the treatment process and those materials were not removed by your ordinary processes of treatment now in effect?

MR. HARTUNG: Mr. Chairman, the samples which I have with me represent material which was taken from the raw Missouri River water. However, we have similar samples which were taken from the treated water which prompts me to say that this material can not be removed by the treatment processes now employed in the water purification plants.

MR. STEIN: Thank you, sir.

At this point we should like to call on Mr. Dwight F. Metzler, of Kansas, for his statement on occurrence of pollution of interstate waters in this area.

Mr. Metzler.

MR. METZLER: Mr. Chairman, I would like to call on Mr. Carl Hodgkinson, who is chief of the water pollution control section of the Kansas State Board of Health, to make this statement.

Mr. Hodgkinson.

MR. STEIN: Thank you.

Mr. Hodgkinson.

MR. HODGKINSON: Mr. Chairman, I would like to take this opportunity to correct a couple of dates for the record mentioned by Mr. Dworsky. The preliminary eningeering report presented to Kansas City, Kansas, and approved by the Board of Health, the date was June, 1953 and the bond issue was approved in November, 1954.

The sources of pollution in Kansas with which we are concerned today are located along the lower six miles of the Kansas River, Jersey Creek, Turkey Creek, Nine Mile Creek, and the Missouri River. Sewage and industrial wastes with a population equivalent of over 800,000 are discharged to these watercourses from numerous outfall sewers. There are forty public and private outfall sewers discharging to the Kansas River in Kansas City, in addition to other sources of pollution in Jersey Creek, Turkey Creek and the Missouri River.

Sewage from an estimated 70,000 population, together with industrial wastes with a population equivalent of approximately 21,000, is discharged directly to the Missouri River and its minor tributaries in Kansas City, Kansas. Sewage from approximately 55,000 persons, together with industrial wastes having a population equivalent estimated at 695,000, is discharged to the Kansas River. The industrial wastes are principally those associated with meat packing, the manufacture of soap and allied products, dairy and food processing, and oil refining. At least ten industries in the Kansas City, Kansas, area discharge wastes with a population equivalent greater than 10,000 and the wastes from some of these industries are equivalent to many times this amount.

In addition, sewage and industrial wastes from homes, businesses and industry in an area of about 5,000 acres in Kansas City, Missouri, are discharged to the Kansas River via the Turkey Creek Sewer. The strength of this waste, as determined on several occasions, varies considerably depending on the amount of storm water flow. Population equivalent determinations have varied from 200,000 to over a million, but recent studies indicate that about 500,000 population equivalent is a good estimate. This sewage makes an elongated septic tank of the Kansas River to its juncture with the Missouri River.

Turkey Creek also carries sewage treatment plant effluent from Kansas communities above Kansas City. Adequate treatment plants serving approximately 60,000 persons discharge to this watercourse.

Effects of this Pollution

The Kansas River near its mouth is grossly polluted by the discharge of sewage and industrial wastes. The pollution is particularly noticeable at times of low flow when sludge banks cause a serious nuisance and are a hazard to the public health. Health hazards also occur in Turkey Creek and Jersey Creek because of the discharge of both raw and treated sewage. These hazards are particularly significant during period of dry weather where raw sewage makes up the major portion of the flow. The most important damages to present and potential water uses occur downstream in the Missouri River. These effects have been discussed already by representatives of Missouri and the U. S. Public Health Service.

MR. STEIN: Thank you, Mr. Hodgkinson.

Are there any questions or comments on Mr. Hodgkinson's report?

MR. HAPPY: I have none.

MR. HOPKINS: No.

MR. STEIN: Do you have any, Mr. Metzler?

MR. METZLER: No.

MR. STEIN: At this point we will take up the next point on our agenda dealing with adequacy of measures taken for the abatement of pollution and the nature of delays, and this will include at the conclusion of this an expression of views on progress to date.

At this point Mr. Happy and Mr. Metzler may call upon those participants they have asked to appear and make statements in addition to any statements they may wish to make themselves.

Mr. Happy.

MR. HAPPY: Mr. Chairman, I shall again call upon Mr. Jack K. Smith, of the Division of Health, to present the statement of our agency.

MR. STEIN: Thank you.

MR. SMITH: Mr. Chairman, ladies and gentlemen.

The Division of Health of Missouri has advised the officials of Kansas City, North Kansas City, and industries which discharge wastes directly to the Missouri River regarding the need for construction of treatment works. Early in 1955, city officials and industrial officials were advised that the states of the Missouri River Basin had established dates for the planning and financing of abatement works by January 1, 1957, and for the construction of said treatment works by January 1, 1959.

Previous notice had been given to the officials of Kansas City, Missouri, regarding the abatement of pollution as early as October 17, 1952. Officials of Jackson and Clay counties and Kansas City, Missouri, were advised of the necessity of providing sewage treatment at some future date and of the desirability of joint planning toward solution to the sewerage and sewage treatment problems of the area.

On July 1, 1953, Missouri law became effective which required the cooking of garbage before feeding to hogs. Kansas City instituted a garbage cooking program at 25th Street and State Line. Subsequent conferences regarding the disposal of pen cleanings to the Turkey Creek sewer have been held with the officials of Kansas City, Missouri, the Kansas State Board of Health, the Missouri Division of Health and, on occasion, the Public Health Service. At each of these conferences, the necessity for providing treatment was brought out by water pollution control officials.

In December, 1953, all cities contributing pollution to the main stem of the Missouri River were officially advised that the water pollution control agencies of the Missouri River Basin states had determined that primary treatment of wastes prior to discharge to the Missouri River was considered necessary to protect the basin water uses. A conference was held on February 16, 1954, to further explain the abatement and to encourage the initiation of planning abatement works for Kansas City, Missouri.

On December 29, 1954, the Missouri Division of Health had received a complaint from a Missouri City resident regarding the presence of garbage and sewage solids in the Missouri River. On February 3, 1955, a conference on garbage disposal to the Kansas River was held at the request of the Kansas State Board of Health. On February 18, 1955, a resolution of the Kansas State Board of Health requesting that the discharge of garbage to the Kansas River be stopped by Kansas City, Missouri, on or before July 1, 1955, was transmitted through the Missouri Division of Health. The practice was stopped with the exception of pen washing after uneaten garbage is removed to a landfill.

On February 23, 1956, an application was filed with the Housing and Home Finance Agency for a planning loan to Kansas City, Missouri. The purpose of the loan was to obtain an engineering study on sewerage and sewage treatment. On September 17, 1956, officials of Kansas City, Missouri, and industries discharging wastes directly to the Missouri River were advised that taste and odor problems had been experienced at downstream water works intakes, and those contributing sewage or industrial wastes were requested to take necessary action to prevent reoccurrence of taste and odor problems. On October 9, 1956, the planning grant from the Housing and Home Finance Agency for an amount of $169,400 was approved.

The firms of Black and Veatch and Haskins, Riddle, and Sharp were employed for the purpose of preparing the report. This report has been discussed with the consulting engineers in its preliminary stages. The report covers that area presently within the corporate limits of Kansas City and that area proposed for annexation.

North Kansas City, Missouri, was advised of the need for water pollution abatement needs concurrently, and proceeded to employ a firm of consulting engineers to draw up plans and specifications for sewage treatment works. Plans for treatment are presently being prepared. Those industries previously mentioned in Division of Health statements are to be included either in the Kansas City, Missouri, program or the North Kansas City, Missouri, program with the exception of the Standard Oil Company located at Sugar Creek, Missouri. Officials of the oil refinery are also aware of pollution abatement needs, and several discussions have been held with representatives of the Division of Health. At the time of the last discussion in February, 1957, the company was investigating the possibility of lagooning refinery effluent on optioned property adjacent to the Missouri River.

That is our statement.

MR. STEIN: Thank you.

Are there any comments or questions on Mr. Smith's statements?

Mr. Happy.

MR. HAPPY: We have previously had the statement presented by Mayor Roe Bartle of Kansas City.

I should now like to call upon Mayor Scharz of North Kansas City for a statement in regard to measures taken and the progress to date.

MAYOR R. D. SCHARZ: Mr. Chairman, members of the panel, ladies and gentlemen.

We do not have a prepared statement to submit at this time. However, the officials of our city do recognize the seriousness of the problem as it has been discussed here today by various officials. We have taken some steps to resolve and alleviate this problem as we affect the over-all picture.

Last Tuesday our consulting engineers, Haskins, Riddle and Sharp, submitted their report of survey as it relates itself to the sanitary sewage and industrial wastes and sewage treatment in our city. Now, Mr. Sharp is here today and I would like to ask him to give you a brief resume of that report, which I believe will better point up what we have done and what we probably and possibly can do in the near future to resolve our problem as it affects the over-all picture.

MR. STEIN: Mr. Sharp.

MAYOR SCHARZ: We will be very happy to answer any questions you might have.

MR. STEIN: Surely.

MR. C. SHARP: Mr. Chairman and Gentlemen.

In brief, our report is a more or less typical type setting forth the city's problem, the flow of sewage, its strength, and some of its major components, the size of treatment facilities required, an estimate of the cost of construction, and an estimate of the cost of operation, with some recommendations as to method of financing.

As the Mayor has told you, our report was presented to the city last Tuesday. I would estimate that the city would be in a position to make formal acceptance and/or modifications of the report by approximately August 1 of '58 with a bond election in approximately September 1 of '59. First phase construction should be able to get under way approximately June 1 of '60, with the second stage of construction contracts approximately September 1 of '60 and start of operation sometime between June and September of '62.

MR. STEIN: Thank you.

Are there any questions?

MR. HAPPY: I have no questions.

MR. HOPKINS: Mr. Sharp, I believe that the schedule of dates that you suggested there was somewhat later than those suggested by Mayor Bartle. Would it not be within the capabilities of your firm to proceed with the engineering part of the work at a more rapid rate if so instructed by the city?

MR. SHARP: I presume you are referring to beginning of construction?

MR. HOPKINS: Well, completion of detailed plans and specifications and construction.

MR. SHARP: I would say this, Mr. Hopkins. Our time schedule is somewhat behind Kansas City, Missouri's, by I believe something in the order of three to six months. However, sir, I would point out to you this, we have got to start from scratch in North Kansas City, whereas, as Mr. McKinley pointed out to you, they have gotten more information in this preliminary stage than you normally do in the way of rock cores and things like that. We would have to do that in North Kansas City. So they are getting time now that North Kansas City would have to take later because we have not been authorized by the city to proceed to that extent and agree in the preliminary phase.

MR. HOPKINS: You feel, though, that those are the earliest dates that could be met with early notification to proceed by the city?

MR. SHARP: As far as I am going to stick my neck out now. If I can beat it, we will.

MR. STEIN: Mr. Metzler?

MR. METZLER: Along the lines of Mr. Hopkins' comments here, Mr. Sharp, there is a gap in here of 13 months between the time the report will be submitted and the bond election, which presumably would be a time that there wouldn't be much engineering done. Now, if this bond election could be stepped up here a little bit, then this presumably would permit you to get started on the preparation of the detailed plans and specifications somewhat sooner, wouldn't it?

MR. SHARP: Yes, however, I would point out this, Dwight. As you know, North Kansas City is a municipality of some 7,000 people. Now, very frankly we are talking about a designed population of 190,000 over there. That means we have got a lot of industry. We have got a lot of wet processes. We have got a lot of meeting and coordinating and cooperation to be achieved between industry and the municipality in setting up the final details of a bond issue, sewer rental charges, ordnances and that sort of thing before you can even put it up as a bond election. I know it is a big time gap but there is an awful lot of ground to be plowed in the meantime.

MR. METZLER: I think your comments indicate that you have the problem pretty well--at least you focused on the problem and have an idea of what it is, I am satisfied.

MR. SHARP: We have got the ingredients. All we have got to do is cook them.

MR. STEIN: Before you leave maybe just for clarification and try to dovetail your dates with the dates indicated by Mayor Bartle and Major Kelly, may I ask you a few just factual questions on the dates.

There was a date given for a basic engineering and feasibility report. Do you have a comparable date for North Kansas City?

MR. SHARP: It was presented in the report last Tuesday, sir.

MR. STEIN: That has already been done?

MR. SHARP: Yes, sir.

MR. STEIN: Now, the next date you have is for the bond election, is that correct, acceptance of your--

MR. SHARP: Well, acceptance and report I think would be the next step, sir.

MR. STEIN: And what is it?

MR. SHARP: With perhaps some modifications and expansions and more details on certain aspects of it.

MR. STEIN: What date would you say?

MR. SHARP: I would estimate August 1 of '58, sir.

MR. STEIN: August 1 of '58. Now, the bond election.

MR. SHARP: About September 1 of '59, sir.

MR. STEIN: And the award of the contracts?

MR. SHARP: Construction contracts? I would say that part of them could be had by June 1, of '60 and the remainder September 1 of '60.

MR. STEIN: Thank you. I think the dates, I might add here, dovetail pretty well except for the award of the construction contract.

Thank you.

MR. METZLER: May I ask the Mayor a question?

MR. STEIN: Yes.

MR. METZLER: I am interested, sir, in this matter of election again and of the work which you and your colleagues have done getting familiar with this problem and the difficulties that might occur in the event a new group of city officials come in without this background prior to some substantial steps being taken here. Would you tell me, is your election, the next election, in March of '59?

MAYOR SCHARZ: No, it is in April of 1961.

MR. METZLER: Good.

MAYOR SCHARZ: However, to elaborate on that, our City Council, half of them--there are eight--half of them are elected every year.

MR. METZLER: I see.

MAYOR SCHARZ: So anything could happen in a year.

MR. METZLER: I see. So the Mayor, your present term--

MAYOR SCHARZ: Four years.

MR. METZLER: --is a four-year term. The Councilmen serve two-year terms, staggered terms?

MAYOR SCHARZ: That is right.

MR. METZLER: Thank you.

MR. HAPPY: Mr. Chairman, I should like to call upon Mr. Johnsen, representing the Standard Oil Company, for a statement in regard to measures taken and the progress to date.

Mr. Johnsen:

MR. JOHNSEN: I am Assistant Manager of the Standard Oil Company refinery at Sugar Creek, Missouri. I would like first to explain briefly how this refinery uses water from the Missouri River. Most of the water taken from the river is used for cooling in heat exchange equipment, and does not come in contact with any oil. A small part of the water comes in direct contact with oil in the processing operations. Since separation of oil and water in these operations is not complete, all of the water, including that used only for heat exchange, is put through gravity type separator boxes, of which there are three in the refinery, for more complete removal of oil from the water. The water is then returned to the river. (Waste water from treating operations is released under controlled conditions.) The refinery has about 1,200 employees. Sanitary sewage currently is put into the river without treatment.

Next I would like to summarize briefly recent improvements in waste disposal and effluent water quality at the refinery. All the new facilities installed since 1946 have cooling towers and a circulating cooling water system so as to minimize the amount of water taken from and returned to the river. The only water returned to the river from this system is the so-called "Blowdown" to control the concentration of dissolved solids, practically all of which were in the water as taken from the river. The newest of the three separator boxes was placed in operation in 1953 to replace an outmoded box in the older section of the refinery. Other processing changes have been made to reduce the amount of chemicals returned to the river.

Finally, I would like to indicate items presently under consideration for further improvement in the quality of water returned to the river.

1. A preliminary design and an estimate of the cost of facilities to strip some of the more volatile chemicals from the water from several processing units so that this water can be used for cooling tower "make-up" rather than be returned to the river are being prepared and will be completed early in 1958.

2. A preliminary design and an estimate for the cost of facilities for the neutralization of waste caustic from refinery operations are being prepared and will be completed early in 1958.

3. Replacement of the older processing units with new units supplied with cooling towers and water re-circulation systems is being considered for a number of reasons, as well as for the improvement in effluent water quality which would result. This study, which is under way, is expected to be completed next year.

4. The use of a biological oxidation lagoon to reduce the oil content and oxygen demand of the effluent water from the three separator boxes is being considered. However, a firm design cannot be adopted until the study described in Item 3 above has been completed.

5. The sanitary sewage from the newer section of the refinery is already gathered in a separate system. Plans are being developed for extension of the sanitary sewer system to the rest of the refinery. We expect to stop the discharge to the river of untreated sanitary sewage by the time the municipalities and other governmental agencies in the area have constructed sewage treatment plants.

In conclusion, I wish to state that the Standard Oil Company intends to continue its efforts to minimize pollution of the Missouri River.

MR. STEIN: Thank you, Mr. Johnsen.

Are there any questions?

MR. HAPPY: I have no questions.

MR. HOPKINS: I have no questions.

MR. STEIN: Do you have any questions?

MR. METZLER: Oh, I guess not.

MR. STEIN: May I ask one? This may be for clarification.

As I understand it, your contemplated time schedule for discharge of domestic sewage from your plant, for stopping that, will coincide with the municipal schedule. Now, as far as your industrial wastes, will that also dovetail with the completion of the municipal schedule?

MR. JOHNSEN: Well, I can't say at this time just how that will tie in. It will depend on the outcome of these things we are currently investigating.

MR. STEIN: Well, thank you.

Do you have any more questions?

MR. METZLER: I was interested in these process changes that you indicated had been successful in reducing some of the chemicals returned to the river. Do you want to just sketch these briefly once over lightly?

MR. JOHNSEN: Well, it would be rather difficult to do. It consists of a number of things, mostly some changes in our treating operations, that would be rather hard to go into detail on right here. We have furnished details of our operations, however, to Public Health Service people here in Kansas City.

MR. STEIN: Are there any further questions?

Thank you very much, sir.

MR. HAPPY: That completes the statements invited by Missouri.

MR. STEIN: Mr. Metzler, would you like at this time to deal with the adequacy of measures taken toward abatement?

MR. METZLER: On the Kansas side of the line, yes.

And again, Mr. Hodgkinson will make the first part of the presentation for Kansas.

MR. HODGKINSON: During the 30-year period from 1920 to 1950 the municipal sewage load discharged to the Kansas River and its tributaries increased threefold, even though considerable sewage treatment works construction occurred. This knowledge, combined with the rising fecal bacteria loading at municipal water works intake. led to an investigation of water pollution in the entire Kansas River basin by Nebraska, Kansas, and three federal agencies.

The field studies and laboratory investigations were started in December 1947 and extended through December 1948. They included a total of 4,310 samples and 34,500 chemical and bacteriological tests. The findings of the survey were assembled in the "Kansas River Basin Water Pollution Investigation" report which was mailed to interested persons in Kansas by the Kansas State Board of Health in January, 1950. The findings of the survey were presented at public hearings held throughout the Kansas portion of the basin in March, 1950.

On the basis of the report and the testimony at the public hearings, the State Board of Health adopted a comprehensive program of pollution abatement. The uniform policy contained the following objectives:

1. At minimum stream flows the biochemical oxygen demand exerted on any one section of a stream shall not reduce the dissolved oxygen content below 5 ppm.

2. At minimum stream flows the goal for coliform bacteria is 20,000 organisms or less per 100 ml.

3. Primary treatment of sewage is the minimum which will be accepted.

Dates were established by the Board by which individual cities were to have adequate treatment facilities placed under contract. The pollution abatement program of the Kansas River from the headwaters to Kansas City, Kansas, is virtually complete at this time, with 71 sewage treatment plant projects completed in the Kansas portion of the basin since 1950.

Because of the involved and complicated problem the following schedule was set forth by the Board for Kansas City, Kansas:

1. An overall plan for intercepting sewers was to be completed by January 1, 1953.

2. Included in the plan was to be a schedule for completing construction of the intercepting system by January 1, 1963.

3. That a construction contract for sewage treatment facilities was to be let by January 1, 1960.

The sewage from Kansas City, Missouri, discharged into the Kansas River via the Turkey Creek Sewer was also covered under the Kansas River policy. No attempt was made to determine the statutory authority over sewage discharged to a Kansas watercourse from another state, but every effort was made to alert Kansas City, Missouri, officials to the need for correction. The Kansas River Basin pollution abatement policy was officially presented to Kansas City, Missouri, on September 27, 1950. Kansas City officials were contacted on three other occasions prior to the adoption of a resolution by the Kansas State Board of Health on February 18, 1955, pertaining to pollution abatement in the Kansas River below the Kansas City, Missouri, Turkey Creek sewer. An example of the educational programs attempted was the initiation of a tour of the Missouri River aboard the Corps of Engineers survey boat, Sergeant Floyd, by 45 city, county and state officials from the Greater Kansas City area on May 25, 1955. Officials of the Missouri Division of Health and the U. S. Public Health Service cooperated fully in calling the attention of Kansas City, Missouri, officials to the seriousness of this problem and the need for pollution abatement.

Considerable progress has been made by Kansas City, Kansas, toward solving the complex problem of separating storm drainage from sanitary sewage and providing interceptor sewers to transport the sewage to a sewage treatment plant. Although the Kansas River Basin pollution abatement policy pertained only to sewage discharged to the Kansas River and its tributaries, the Kansas City, Kansas, officials decided to carry out their planning on a city-wide basis including drainage to the Missouri as well as the Kansas River. A consulting engineer was retained to study the problem and submitted a preliminary engineering report to the city and the Kansas State Board of Health in June, 1953. Basically, the report calls for the separation of all storm and sanitary trunk sewers with the existing sewers generally being used for sanitary flow and new trunk sewers for storm flow. The report proposed the construction of 12 sewage lift stations, main interceptors and sewage treatment plants. Based on the engineering report, a 3.7 million dollar bond issue was approved by the electors in November, 1954, by a 6-1 margin. In 1956, Kansas City signed a contract for the preparation of final plans and specifications for key interceptor sewers. The Kansas State Board of Health has reviewed plans and specifications for two interceptors and has issued permits for these sewers. Eight more sewers are scheduled for construction during the next two years.

The progress made by 1954 indicates that the officials and citizens of Kansas City, Kansas, became informed about their sewage treatment problems soon after the adoption of the Kansas River Basin pollution abatement policy. However, after study of the sewer system it became apparent that some of the sewage collection and treatment problems could be solved only by a cooperative approach with Kansas City, Missouri, and North Kansas City. This required study and endeavor by city officials on both sides of the state line. Civic leaders also pointed out the necessity of proceeding toward pollution abatement on an area-wide basis to prevent hardships to citizens and industries from a financial viewpoint. Consequently, the rate of construction has been retarding pending studies by Kansas City, Missouri, and the development of its role in the solution of this regional problem.

Officials of Kansas City, Kansas, are here to discuss their progress to date and indicate their plans for the future. The Kansas City, Kansas, Chamber of Commerce has been actively participating in this program and is here today as an unofficial representative of industry in Kansas City, Kansas. The Phillips Petroleum Company has made in-plant changes which have reduced the volume and strength of their wastes, and studies of their facilities are under way to determine methods of treatment. The Phillips officials are here today to discuss their progress and indicate their plans for the future.

Part of the industrial area in Kansas lies outside Kansas City, Kansas, in the Fairfax Industrial District. The Fairfax Industrial Association is also represented here today to tell of plans by its industries for the treatment and disposal of wastes.

MR. METZLER: When this conference date was established, or shortly after it was, we discovered that Mayor Paul Mitchum of Kansas City, Kansas, would have to be on the West Coast at another meeting. This didn't bother us too much, because Commissioner Swarner has been particularly active in this matter in Kansas City, Kansas, and would have made a very able substitute for the Mayor. Mr. Swarner has been ill in bed with the flu for over a week and he is represented today by Mr. Leo Moroney, who will make the statement for Kansas City, Kansas.

Mr. Moroney.

MR. MORONEY: Mr. Chairman, members of the panel, ladies and gentlemen.

This report which I am about to deliver has been approved by resolution by the Board of City Commissioners of our city.

In what is Kansas City, Kansas, today there once were five separate municipalities of Quindaro, Wyandotte, Armourdale, Argentine, and Rosedale. The present city was completed with the exception of some minor additions by the annexation of Rosedale in 1922. As each of these communities was settled, beginning with Wyandotte, originally incorporated in 1897, sewer systems began to grow. These systems consisted of combined storm and sanitary sewers draining into the smaller waterways and these in turn into the Missouri and Kansas Rivers. What the City of Kansas City, Kansas, really has is an amalgamation of several formerly independent and inadequate combined sewer systems. As a matter of fact, not until 1948 did the city even have a reasonably accurate map showing the location of all these sewer lines throughout the city.

The city's present difficulties in regard to its sewer collection system are also caused by the fact that it has had available about six miles of the Kaw River running through the city from west to east into which its major sewers could dump directly. Because of the existence of this large, flowing river which appeared to satisfy the city's sewage disposal needs, it did not begin to develop a system of collecting trunk sewers which are so essential when a program of sewage treatment is undertaken.

It was not until orders were given by the Kansas State Board of Health, beginning in 1950, directing it to begin planning for sewage treatment, that these very basic and most expensive deficiencies in its sewer system were recognized. Most other cities were forced to begin the construction of the trunk and interceptor sewers to get the sewage out of the city itself to prevent extreme nuisance conditions. Because of the location of the large rivers, particularly the Kaw, the city did not need such interceptor sewers so it is faced with the problem of financing not only the four sewage treatment plants for the various parts of the city, but also the very expensive collection system to bring the sewage to the plants for treatment, all within a comparatively short time.

It should also be pointed out that there are two smaller waterways or creeks running through the city into which sewage is discharged. Installation of proper sanitary collecting sewers along these creeks is vitally needed.

In April, 1950, the Kansas State Board of Health adopted a policy on Pollution Abatement for the Kansas River Basin. In this policy, Kansas City, Kansas, was given the following time schedule for compliance:

(a) An over-all plan for intercepting sewers shall be completed by January 1, 1953. This plan shall outline a plan which will bring all the sewage to a proposed treatment plant, or plants, and separate storm and sanitary sewers, particularly in the industrial areas, and further that no more combined sewers may be added to the system in the future.

(b) The plan shall show a schedule for completing construction of the intercepting system within 10 years (January 1, 1964).

(c) That within 7 years (January 1, 1960) plans for a treatment plant will be completed and a contract let for construction of the plant.

In response to this order by the Kansas State Board of Health, the city retained the services of a consulting engineer to prepare an engineering report on the sewage collection and treatment needs. An application for a loan from the Community Facility Service of the Housing and Home Financing Agency was made and approved in November, 1950, to cover the cost of this study. This report was completed and submitted to the city and the Kansas State Board of Health during June, 1953. Basically, it calls for the separation of all storm and sanitary trunks as needed, construction of twelve sewage lift stations, and four large sewage treatment plants.

The engineer making the report came to the conclusion that four treatment plants were needed because of the lack of available land in one place for a single plant and because of the physical separation of the city by the major streams. The cost of the entire project as contemplated in the report was estimated by the engineer to be $20,714,000. This was in 1953.

At the time of the submission of the report, plans were already under way to submit a major bond issue to the citizens for approval. The approved bond issue included 3.7 million dollars for various storm and sanitary sewer projects. It is obvious this amount will not nearly cover all of the city's sewerage needs, but it was decided to spend the money on vitally needed trunk sewers on Jersey and Turkey Creeks which are actually open sewers within the city, as well as to correct serious storm water problems in Argentine, Rosedale, and Armourdale. Bond issue money was also to be used to purchase land for two of the sewage treatment plant sites before industrial building in the area makes the cost prohibitive.

It is easily apparent that additional financing is needed in order to complete the city's program. It is obvious that the engineering and construction phases of this problem are very simple compared to the one of finance. The financial condition of the city as of now is very sound, but there are severe limitations on the amount of future debt that can be incurred without radically changing that picture. The city is making a thorough study of the use of revenue bonds to finance its future sewer needs, and anticipates future financing will be by revenue bonds based on sewer usage charges.

In this city there are a great many large industries, many of which are heavy producers of very strong wastes. As an example, there was within the city and tributary county areas at the time of the engineering report a population of 197,230. The equivalent population, however, as based on sewage strength caused by both domestic and industrial load was 780,860. It is anticipated that all of the sewage, both domestic and industrial, will be treated at the city sewage treatment plants. Individual industries should be responsible for removing their own peculiar wastes not compatible with city treatment. City representatives have been working very closely with the industrial wastes committee of the Kansas City, Kansas, Chamber of Commerce to solve this problem.

The city believes that stream pollution abatement is a greater problem than that of individual cities as it transcends city boundaries and even state lines. The City of Kansas City, Kansas, would like to call your attention to what it would consider a most important phase of this problem in the greater Kansas City area. South of the Missouri River, the dividing line between Kansas City, Missouri and Kansas City, Kansas, is a man-made boundary. A very large box sewer enters Kansas City, Kansas, in the old Turkey Creek Valley from Missouri and flows into the Kaw River. The existence of this sewer crossing the state line illustrates the point that planning should be done on an area basis. On our west city limits we also find geographical conditions that make it feasible for sewer district to transcend city boundaries.

The progress made by the city to date in construction planning has, of course, been limited to that amount contained in the bond issue. Consulting Engineers have been retained to prepare the plans for all of the work involved in that issue. Approximately one-half million dollars of this construction is now in progress. Surveys and descriptions are completed for the acquisition of the sewage treatment plant sites. These engineering contracts require that all surveys, plans, and specifications be completed by January 1, 1959.

The City of Kansas City, Kansas, as you can see, has been aggressive in its program to eliminate stream pollution. It is its plan and desire to continue this program and to complete the program geared to a timetable that is compatible with the Greater Kansas City area. The city believes that planning and construction could be accomplished in a five-year period. However, financing and coordination with the greater metropolitan area may not permit this five-year time-table to be met.

I might say further that it is anticipated that all of the 3.7 million dollar bond issue will be under contract by March 1, 1959.

MR. STEIN: Thank you. There may be some questions.

MR. MORONEY: All right.

MR. STEIN: Do you have any, Mr. Metzler?

MR. METZLER: Let's give Mr. Happy the opportunity first.

MR. HAPPY: I believe not.

MR. HOPKINS: No.

MR. STEIN: All right.

MR. METZLER: I have one question there. Did I understand correctly the date that you expect to have the plans completed for this as January 1, '59?

MR. MORONEY: Yes. If I may call on Mr. Truman Schlup, who is our Consulting Engineer, to verify that.

That is correct, isn't it, Mr. Schlup?

MR. SCHLUP: That is the planning for that work contained in the issue that has been approved.

MR. METZLER: I am more confused now than I was. I thought you were talking about the plans for the entire program of sewage collection and treatment. What is the date when you would expect to have the plans completed for the entire program of sewage collection and treatment?

MR. MORONEY: I don't know that I can answer that question.

Can you, Mr. Schlup, at this time?

MR. SCHLUP: No.

MR. MORONEY: I am sorry, I don't believe we could give you a definite date on that point right at this moment, sir.

MR. METZLER: That is the only question I have.

MR. STEIN: Just for clarification, in dealing with comparable dates, I take it that I am referring to work for your completed program, you do not have any target date for bond election for awarding of the contracts or completion as of this time?

MR. MORONEY: You mean for the balance of the 16 million dollars needed?

MR. STEIN: Yes.

MR. MORONEY: No, sir, we have not.

MR. HOPKINS: But I believe you did say that Kansas City, Kansas, would attempt to meet, adhere to, the same schedule that was committed for other communities in the metropolitan area?

MR. MORONEY: Yes, sir. As Mayor Bartle indicated, both he and Mayor Scharz of North Kansas City have met with Mayor Mitchum on a number of occasions and discussed this thing. I think it was mutually agreed that they would all try to adhere to one timetable for the entire area.

MR. HOPKINS: And I believe your statement included that your planning was tentatively geared to completion of these projects within a five-year period?

MR. MORONEY: Yes, sir.

MR. HOPKINS: That again comes up to 1962.

MR. METZLER: I would like to make one more comment here with relation to this date, because the meetings that the Kansas State Board of Health has had with the city officials of the date of January 1, 1960, has always been clearly the date at which construction contracts for the sewage treatment works were expected to be let, and unless there has been some change in the last few days I think this is the target date so far as Kansas City, Kansas, is concerned for letting construction contract.

MR. MORONEY: I am sure that is correct. And if I did confuse you gentlemen or anyone else in regard to those dates, it is simply because the two gentlemen most qualified to have delivered this presentation, the Mayor and the Commissioner of Health and Finance, were unable to be here and I am sort of pinch-hitting.

MR. METZLER: You have done a very fine job. Thank you.

For the next portion of the statement we have been fortunate to have a man very active in recent weeks on the pollution control subcommittee in the Kansas City, Kansas, Chamber of Commerce. The problem in Kansas City, Kansas, is very heavily an industrial one. With some 150,000 people connected to the sewer we have a sewage load, as you remember from the comments, of somewhere between 800,000 and 1,000,000 persons.

To make the presentation today for the pollution subcommittee of the Chamber we have Mr. Ralph Bates, of Procter & Gamble, and we feel very fortunate to have him in the area. He has previously worked on this problem with his company in another major area of this country and is providing a great deal of support and leadership to the problem here.

Mr. Bates, would you like to make a statement, please?

MR. BATES: As was indicated by the city officials of Kansas City, Kansas, the Water Committee of the Chamber of Commerce of Kansas City, Kansas, has been working very closely with the municipal authorities in connection with pollution abatement in order that the interests of both the municipality and the industry in the municipality can be satisfied by any solution.

The subcommittee has recommended an official statement for the Chamber of Commerce and that statement has been approved; so what I am going to read now is the official position of the Chamber of Commerce of Kansas City, Kansas.

The Chamber of Commerce of Kansas City, Kansas, recognizes that pollution abatement is necessary and inevitable for the country as a whole and for this community in particular. They, therefore, have taken steps to keep industry advised of the status of activity in this direction and recommended that each industry review its own situation in this respect. Inasmuch as the industries of Wyandotte County have been cooperating with the City of Kansas City, Kansas, in developing a sewage treatment plan, and since the City of Kansas City, Kansas, has voted 3.7 millions of dollars in bonds in an election in October, 1954, for the purpose of constructing sewers and purchasing treatment plant sites, it has been recommended that the program be continued and that every effort be made to complete planning.

The Chamber of Commerce, based on the recommendations of the Pollution Sub-Committee, Water Committee, believes the city should take continued steps toward meeting such deadlines as may be established on contracting for sewage treatment facilities. They recommend the city treat sanitary industrial wastes that can practically be collected by the city sewer system with industry removing their own peculiar wastes not reasonably compatible with city treatment.

Industries desiring to use their own treatment processes should be permitted to completely process all or part of their effluents so that they can be dumped directly into the rivers or the storm water system.

The Chamber of Commerce of Kansas City, Kansas, feels that municipal sewage handling facilities should be financed by revenue bonds based on service charges. The Chamber also recommends study toward the development of a metropolitan sewer district.

The Kansas City, Kansas, Chamber of Commerce will continue an active role in completing plans for simultaneous construction of sewage treatment for the entire metropolitan area.

MR. STEIN: Thank you. Any questions?

MR. METZLER: For purposes of clarification here, Mr. Bates, your statement contains a sentence that says something like industries desiring to treat their own wastes should be allowed to do so if they do an adequate job.

MR. BATES: That is correct.

MR. METZLER: My question is this. You have had close contact with the representatives of the major waste-producing industries in Kansas City, Kansas.

MR. BATES: That is right.

MR. METZLER: And as far as you are able to determine, the general intent is to pretreat these wastes as is necessary, but to take advantage of the decreased costs in treatment at a large common facility and so far as is known now there are no plans under way by major industries to provide separate waste treatment plants?

MR. BATES: That is correct. But since we do not know the exact extent of the service charges we wanted to leave the door open for industry to do their own treating if it was more feasible. Previous studies, though, in the Ohio River Valley have indicated that it is usually much more economical for the municipalities to make a treatment plant large enough to take care of all of industry and that industry support it by means of service charges.

MR. STEIN: Thank you.

MR. METZLER: Thank you, Mr. Bates, for your presentation.

One other statement, then, from Kansas City, Kansas or from the Kansas side would be included on this portion of the agenda. The Phillips Petroleum Company maintains one of the two principal refineries in the metropolitan area and they have here today their expert on waste treatment, Mr. McMahon, who has had wide experience in this for the Phillips Petroleum Company and is guiding the planning and studying so far as this specific refinery here is concerned.

If Mr. McMahon would come up and make a statement for the Phillips refinery.

MR. McMAHON: Martin McMahon, Phillips Petroleum Company.

About two years ago when the Kansas State Board of Health acquainted the Phillips Refinery with the need in their efforts for minimizing wastes in the Missouri River, the refinery expressed a desire to cooperate with the Board of Health and immediately put emphasis upon a waste disposal program. Starting such a program we suddenly became aware that we had only rudimentary knowledge of what actually was going out of sewers, which meant a fact-finding program had to be set up first.

I think perhaps a resume of the various steps of such a program might be of interest because it is a reasonably good method of setting up a fact-finding program on industrial wastes.

First we appointed a waste disposal committee. The assistant refinery superintendent was appointed on the committee to lend an emphasis. The assistant chief chemist was put on the committee to give it access to the testing facilities in a little better manner. The processing engineer was put on the committee to help in the calculation of the design. And the stock loading superintendent was put on the committee to provide operational knowledge, detailed operational knowledge.

Looking over our drawings we found that they were quite sketchy in regard to the plant sewers, in some cases they were not available. So the committee's first decision was to enter a three-pronged attack upon the problem and in the succeeding months information was collected upon the sewers. In most cases it meant physically tracing down the sewers and the flow rates were measured. Reports were requested from all the unit operators on the irregular and non-continuous dumps of waste into the sewers. The laboratory engaged upon an increasing and enlarging program of waste testing that now occupies the major efforts of two men in running waste tests. By this time we are now approaching the point where we think we have a pretty good picture of what our waste problems are.

During this time we found numerous examples of obvious situations that were lending themselves to creating an unsatisfactory condition. Some examples of this might be in order.

We had a sizeable volume of oil emulsions in our north trap. The emulsions were of such large volume we had trouble handling them, breaking them, returning the oil back to the refinery. They also increased oil carry-through in the trap. In tracing down our sewers we found just a small stream of wastes from the barrel-washing section of our compound plant. We immediately suspected this and transferred it to a non-oily sewer and by doing so proved that it was causing all our trouble, since the API immediately resumed operation in an expected manner.

We continued this extensive work on segregation of our sewers into three systems. We have an oily water system, oil-free water systems, and a chemical system that goes to our chemical holding pond. Actually the biggest part of the refinery's waste disposal problem can be countered by this segregation of the refining sewers.

As we made these tie-ins, why, we have noticed an improvement in the past two years, considerable improvement, in our waste outlets. The other chemicals we found in the oily sewers that were creating emulsion problems, of course, were water treatment sludges, boiler blowdowns, things of that nature.

We are also getting a periodic surge of emulsion due to an upset operation on our desalter. This was countered by plunging the waste from this trap through a 50,000-barrel tank that we put into that service. Close inspection in the next month of that particular outlet or outfall of the refinery showed that we had reduced the oil in the outlet from 85 to 24 parts of a million or approximately 75 percent.

When the Kansas Board of Health notified us of the taste and odor problem in the river we immediately suspected a water caustic solution which we had knowledge that sometimes created those problems. We immediately set to work and removed that from the system and in doing so reduced the amount of phenolic material in our effluents to 90 percent of what it had been formerly. This material is a byproduct of caustic washing or catalytic reformed gasoline. A market was found for it that would just about pay the transportation costs to get it to the market. Consequently, carloading facilities were constructed and the material is being sold at the present time, so-called sold.

This 90 percent of the phenolic material amounted to about 110 parts per million of phenolic material in the refinery outlet. We believe this to be a major achievement in this two-year period of our waste disposal program.

We have some periodic oil contaminations of these refinery effluents and most of this is caused by emulsions drawn down from the present chemical desalters. We have under construction an electrical desalter, which is more efficient in this regard, and this will reduce these emulsions and not only reduce the emulsions but dissolve or reduce other emulsions we find in the refinery by combining them with the crude and charging them back to this electrical desalter.

We have presently reached the point of diminishing returns on these caustic and easily handled solutions and are now studying major items of contamination to further reduce or improve the plant outfalls. We think it would be premature at this point to list the methods being considered because the plans are still in a state of flux and there are various combinations which work together which have to be resolved out to find the best one for our situation.

But Phillips is interested in maintaining good relations with all its downstream neighbors and you can count on us for continued improvement in our refinery outfall.

MR. STEIN: Thank you, Mr. McMahon.

Would you just wait a moment, if there are any questions or comments.

Do you have any questions or comments with regard to Mr. McMahon's statement?

MR. HAPPY: No.

MR. HOPKINS: No.

MR. STEIN: Mr. Metzler?

MR. METZLER: I am sorry to always be the one to ask questions, but you referred to the reduction in phenols being 90 percent by the marketing of the waste caustic.

MR. McMAHON: Yes.

MR. METZLER: And then a little later you referred to 110 and I wasn't sure whether it was parts per million or parts per billion. Would you--

MR. McMAHON: It is parts per million taken out of the refinery outfall.

MR. METZLER: Million. All right.

MR. McMAHON: Is that all?

MR. STEIN: Yes, thank you very much.

Do you have any further folks to call on?

MR. METZLER: This would conclude the ones who have been invited to make a presentation.

MR. STEIN: At this point we should like to call on any other folks in the audience who have a statement to make or wish to make a statement at this time. If there are any such, would you please come up and take the mike and the lectern and speak. Are there any who wish to do so?

Seeing no hands or no movement, we will go on.

I think at this stage we get to the point of expression of views on progress to date and an attempt at a reconciliation of these dates, and perhaps we will see democracy in action. I would think that the expressions we have heard so far of progress being made, which is considerable, and plans are not too far apart. I think we have two basic problems here for the conferees to determine: One, the proposals by municipalities and the time schedule proposed by them, secondly the question of industrial wastes, and I would think that the first order of business, perhaps, would be a discussion of the municipal proposals.

Now, in general, is there any fundamental comment as to the adequacy of the municipal proposals from the conferees without getting into detail for just a moment as to the dates of the interim steps?

Are there any? Mr. Happy?

MR. HAPPY: Would you go on to the other conferees, please?

MR. STEIN: Mr. Hopkins?

MR. HOPKINS: I think that the conferees recognize that tremendous progress has been made in about a seven-year period in this metropolitan area. Much more recent than that I think that full cognizance of the extent of pollution was not realized, there remained a lack of conviction on the part of city officials that the problem was sufficiently important to warrant their early consideration, and a general reluctance on the part of the communities to admit and shoulder their responsibilities.

I think that we should take satisfaction from this conference that all three of the cities represented here today and the two major industries having their own outlets outside corporate limits have in effect frankly realized the extent of pollution and have committed themselves to a real effort to abate that pollution in reasonable time. To me that constitutes a significant accomplishment.

While I think there may be discussion on some minor items of the agenda, I think that we do all recognize that much has been accomplished since the official water pollution control agencies of the states and the Public Health Service first evaluated this problem and agreed upon a report and a program, I believe, in 1951.

MR. STEIN: Thank you.

Do you have any comments at this point, Mr. Metzler?

MR. METZLER: No, except it seems to me that we ought to emphasize the comments which Mr. Hopkins already made in pointing out the real progress which has been made and the change in thinking, for it wasn't very many years ago in this building that folks didn't think sewage treatment was within the next 20 years or so. So it is good to see this progress being made. I think this is a pretty tight schedule, this composite schedule.

I have only one comment to make generally, and that is if the bond election dates can be pretty well coordinated in the three communities, we already have two dates that are essentially the same, it seems to me that this is advantageous for the over-all program.

MR. STEIN: I would agree. But I think perhaps we can take these dates one at a time and attempt a reconciliation in a moment.

Do you have any general comments, Mr. Happy?

MR. HAPPY: Mr. Chairman, I have been extracting from the record of the St. Joseph, Missouri, conference held last June their time schedule. The City Council of St. Joseph, Missouri, has by Council action scheduled a bond issue election for March 4, 1958. As a result of the conference held last June they had in their schedule provided for a seven-month period between the time of their bond issue election to the development of detailed plans for construction, and anticipating a contract award for the construction of treatment works by January 1, 1959. The date as projected here by Mayor Bartle of January 1, 1960, for the award of a principal portion of the construction contract is just one year later.

The point I wish to make, and we are attempting now to secure the time schedule as a result of the Omaha conference, is that there be not too much difference in those projected schedules.

MR. HOPKINS: The Omaha schedule was essentially the same as the St. Joseph schedule. I believe the contract dates were the same.

MR. STEIN: Those points are well taken.

I think with that we might get down to the details of the conferees of these schedules.

Now, the first date given is for what is known generally as the preliminary report, here referred to as the basic engineering and feasibility report. Based on statements made today, if I understand correctly, in North Kansas City that has been done, in Kansas City, Kansas, that has been done, and I am referring to a complete treatment works which will result in a reasonably satisfactory condition. In Kansas City, Missouri, the date proposed is March 1, 1958, for this basic engineering and feasibility report to be completed.

Now, is that date satisfactory to the conferees?

MR. HAPPY: Yes.

MR. HOPKINS: Yes.

MR. METZLER: Yes.

MR. STEIN: We can go on to the next point.

The next point will be the acceptance by the municipal officials of this basic engineering and feasibility report with such revisions and modifications as they may make. Now, in Kansas City, Kansas, as I understand it, that report has already been accepted. It had been accepted back on June 30, 1953. In Kansas City, Missouri, and North Kansas City there is a slight discrepancy of dates. North Kansas City has the date for the acceptance of August 1, 1958, and Kansas City, Missouri, has as its date March 1, 1959. This was the date that we suggested in Kansas City, Missouri, to which consideration might be given to moving it up somewhat because there seems to be a year, full year, between the time the report is submitted and before the acceptance by the city. And again let me repeat, the longer the time lapses between those two period is the shorter the time will be for preparation for the bond election.

Now, I would like to have some comment as to the dates for the acceptance and modification and revisions of this basic engineering and feasibility report by Kansas City, Missouri, and North Kansas City.

MR. HOPKINS: Could I interject a statement before we enter into that, Mr. Stein?

MR. STEIN: Yes.

MR. HOPKINS: I think the conferees have each individually acknowledged here today that the schedule for the first contract award, the balance of the contracts, and the completion of construction as proposed by Mayor Bartle were very acceptable to the conferees, individually and collectively, so that the point I want to make is that the only disagreement that appears to be resolved is in the steps two and three, the acceptance or revision of the preliminary engineering report and in the bond election. I think with that understanding, attention might better be focused on the two points.

MR. STEIN: That is correct.

(RECESS)

MR. STEIN: May we resume so we can continue with this.

Those points are very well taken, Mr. Hopkins, but I think the acceptance date, then, let's say for North Kansas City of August 1, 1957, is eminently satisfactory to all the conferees.

MR. HOPKINS: Yes.

MR. STEIN: Would anyone care to speak to the acceptance date of March 1, 1959, for Kansas City, Missouri, or perhaps have an alternate suggestion?

MR. HOPKINS: I would like to ask Mr. McKinley, who I believe is representing the City of Kansas City for the remainder of the conference, that since the other two cities can meet an August '58 deadline for acceptance or revision of the report if it would be unreasonable to expect Kansas City to make that same deadline?

MR. McKINLEY: I probably see some confusion here by coupling two items together, acceptance or revision of the report. An earlier date for that period would be entirely reasonable. The Mayor has made very definite statements on the conclusions which the elected body might reach and the deliberations which would be necessary in order to reach them to come up with a definite program and plan of financing.

If you want to separate that March 1, '59, into the engineering aspects and the financing aspects, you may advance--I am sure I would speak the thought of the Mayor--you can very well advance and give us six months in which to come to a definite conclusion on the engineering aspects of this original report.

I would not be with authority to suggest any alteration in the programming of a bond proposal. I think he outlined very clearly the reasons why it would necessarily fall during the summer months or the early fall months of 1959.

MR. STEIN: May I clarify this? I think in speaking of acceptance and revision of the basic engineering and feasibility report we were speaking in terms of acceptance and revision by the political body represented, and that is by the City of Kansas City, Missouri.

MR. McKINLEY: That is right.

MR. STEIN: In other words, as I take it, then, for that you would see no undue burden if that date were made August 1, 1958?

MR. McKINLEY: That would be September 1, wouldn't it? Six months after March 1, '58, would be September 1, '58.

MR. STEIN: All right. Well, we can do that, September 1, 1958.

MR. McKINLEY: We are working concurrently with the engineers. It will not be entirely new to us at all. In fact, we will be very familiar with it and we will make almost final passage from a strictly engineering basis before it ever goes into final print. Yes, six months is plenty.

MR. STEIN: Thank you, sir.

Now, the next point we are at is the date of the bond election, and again let me repeat what Mr. Metzler pointed out. His point of view was that it might be desirable for all communities to have the same date for a bond election. My score sheet shows that Kansas City, Missouri, and North Kansas City both have proposed September 1, 1959, Kansas City, Kansas, has not proposed a definite date, but have indicated their willingness to go along with the general time schedule acceptable to the other communities.

May we have some comment on that bond election date?

MR. METZLER: I will lead off by saying that--

MR. McKINLEY: Are you through with me, Mr. Chairman?

MR. STEIN: Yes, for the moment.

MR. METZLER: For the moment. We may raise this question again. From the standpoint of the over-all view it does seem that a full year is quite a bit of time between the acceptance of the engineering report and holding the bond election. I would say for Kansas that we would accept this date maybe a little reluctantly, but I think that on the other hand Mayor Bartle has spoken for the people who are presumably in the best position to judge when this bond election should be held. I am sure they have taken an honest, careful look at it, and except for maybe asking them to look at it again and asking them to step this up I would not want to go further than that.

MR. STEIN: Mr. Happy?

MR. HAPPY: I for the most part reflect Mr. Metzler's views on that, in that it is a matter considered by the officials of Kansas City. I think it highly desirable that the date be stepped up, realizing that a full year is a considerable length of time between acceptance of the engineering report and holding the election to finance the works.

MR. STEIN: Mr. Hopkins?

MR. HOPKINS: I wonder if a bond issue date of January 1, '59, wouldn't permit the satisfactory handling of two items that have already been mentioned during this conference, first the assurance of financing and an earlier start and more adequate time for the preparation of detailed plans and specifications, and it would permit the election to be held before the city elections which would rename City Councilmen and a Mayor, so that we would have the combination of those two factors. It would mean a lesser time for the public information campaign that must precede a bond issue if it is expected to pass.

MR. McKINLEY: I think Mayor Bartle discussed the, you might say, political aspects and the thinking of those people who are subject to the will of electorate, I think he expressed that very clearly, and you certainly would not expect that I should make any statement in opposition. We from an engineering standpoint, as you well know, sir, would like to have the money available within the next 60 days so we can let the major contract for design and get rolling, but we can't operate that way. I think he expressed that very clearly.

May I say, sir, that I could see a tremendous value if the three Mayors would get together and have these elections simultaneously, the psychological value of it might be a tremendous boost to a successful consummation of an election.

MR. HOPKINS: I would like to capitalize on Mr. McKinley's statement with a suggestion that the bond date proposed be accepted as the latest date at which it would be considered, but that the Mayor of Kansas City be asked to join with the Mayors of North Kansas City and Kansas City, Kansas, to make a complete and thorough review of the earliest feasible date that a bond issue could be held, with the objective, if feasible, to schedule the election not later than January '59. If the Mayors say that is unreasonable, that is not feasible, I suggest then that the conferees accept the other date.

MR. METZLER: May I add a postscript to this?

MR. HOPKINS: Yes.

MR. METZLER: Would it be proper to also suggest that they explore methods for financing the preparation of the detailed plans so that the preparation could actually be started prior to the bond election? I was thinking of such things as have been done by Omaha, for example, where they have actually instituted a series of service charges. This gives some revenues and some background and some funds for the preparation of the necessary engineering and legal work.

MR. McKINLEY: As you know from the statement made by his Honor, the City Council is now, and even as you read the morning paper you see they were in long session last night, trying to devise means of creating revenue, one of which was a sewer service charge. We who are responsible for servicing the sewers do not have any call on any funds that might be provided by that means. And the Mayor made particular emphasis that we need to pay first attention, as we all should, to police, fire and public health, and it is an emergency program before the Council now.

A contract for final plans and designs on a project of our magnitude is going to run into a tremendous sum of money, even though there are consulting engineers I would say that, so I do not know, sir, where there is any possibility of making preliminary contracts for final plans. If there should develop any such, we, of course, would be delighted to get the information in shape, but we would never think of letting a contract for final plans and specifications for this project until we could foresee funds with which to use those plans.

MR. STEIN: Thank you very much, Mr. McKinley.

MR. McKINLEY: Thank you, sir.

MR. STEIN: The next point we come to is the letting of the first contract.

Now, here again Kansas City, Kansas and Kansas City, Missouri, presumably have January 1, 1960. North Kansas City, on the other hand, has June 1, 1960.

Does anyone want to raise a point on that or is that difference satisfactory?

MR. HOPKINS: First let's hear from the State of Kansas.

MR. METZLER: I think as far as Kansas is concerned, if the two major cities, Kansas City, Kansas, and Kansas City, Missouri, let their contracts at the same time it is perfectly reasonable, for the reasons that Mr. Sharp stated, to give North Kansas City an extra six months. I would think six months should be the maximum.

MR. STEIN: Well, you actually would be moving up North Kansas City six months.

MR. METZLER: No, I was agreeing to the dates as have been submitted, with North Kansas City having submitted a date six months later than Kansas City, Kansas, or Kansas City, Missouri.

MR. HOPKINS: The size of their project is such that there would be no trouble completing it at the same time--

MR. METZLER: That is correct.

MR. HOPKINS: --even though they started slightly later.

MR. STEIN: I see. Well, that would be fine, then.

MR. METZLER: But Mr. Happy actually is--I think he is the one who should speak to this.

MR. STEIN: Yes.

MR. HAPPY: My reaction to this is something similar to the revised schedule proposed by Mr. Hopkins in regard to the financing, where, if I understand his revision, that these conferees accept, with reluctance, that one-year gap between acceptance of the plans and the election for financing. Again I would say with respect to North Kansas City that we accept that with some reluctance and with a suggestion that the date be a deadline date and that if at all feasible to get in conformity with the established contract award date of January 1, 1960.

MR. STEIN: Is that agreeable?

MR. METZLER: Yes.

MR. HOPKINS: Yes.

MR. STEIN: The next point we have is the balance of the contracts. Now, Kansas City, Missouri, has given March 1, 1960, North Kansas City has given the date of September 1, 1960, and Kansas City, Kansas, has not given a date and I didn't know actually whether it was contemplated that contracts would be let in stages or perhaps all the contracts may be let the 1st of January 1960. That wasn't really clear.

MR. METZLER: I believe the situation as far as Kansas City, Kansas, is concerned is that it already has contracts under way that compare with this first contract which is proposed by Kansas City, Missouri, for 1-1-60. The completion dates, it seems to me, are more important and the one, frankly, that we have been talking to Kansas City, Kansas about has been 1-1-63, this being caused by the major job over there of separation of storm and sanitary sewage. I think the treatment works may very well, however, be completed by this 3-1-62 date and this would be the date that we would try to see Kansas City, Kansas meets.

I hope I made the differential clear, now. There are the two problems, the one of the separation of storm and sanitary sewage and bringing the sanitary sewage to a point of treatment. The completion of those sewers is actually scheduled for 1-1-63. But so far as having the treatment works completed and sewage receiving treatment, the 3-1-62 date seems to be a reasonable one.

I don't know whether the representative of Kansas City, Kansas has any desire to speak on this point. If he does, why--

MR. MORONEY: No, I have no further comments. I believe Mr. Metzler covered it.

MR. STEIN: Thank you.

Are there any comments on the difference between the Kansas City, Missouri, and North Kansas City dates for the award of the balance of the contracts? The one, as you will recall, for Kansas City, Missouri, is March 1, 1960, North Kansas City September 1, 1960. The completion dates on both are the same.

MR. HAPPY: Yes, that is right.

MR. STEIN: Now, that difference will not be material?

MR. HAPPY: I don't see that it will.

MR. STEIN: The statement would be that the conferees would accept with reluctance the date of September 1, 1960, for the letting of the balance of the contracts for North Kansas City, but would strongly urge that all feasible methods be explored so that these contracts could be let by March 1, 1960, and the understanding would be that these contracts were to be let no later than September 1, 1960, in any event.

Now, the completion dates are the same and I assume the reservation--let me not assume this. May I ask about the reservation Mr. Metzler had about the separation of storm and sanitary sewage from Kansas City, Kansas, would be January 1, 1963 Would that modification be acceptable?

MR. HAPPY: On that point I should like to ask Mr. McKinley whether he envisions any similar condition in Kansas City, Missouri?

MR. McKINLEY: Well, yes, that is one of the major problems that we will encounter, of course. If we are merely designing a sewage treatment plant there are typical plants in several cities of similar area, it would be quite a simple engineering problem. But the readjustment of our interceptor, our interceptor sewers and the rearrangement of our collecting system is the major part of the engineering study and that would be the project on which we would hope to make our first award for construction, because that is the more difficult problem and lengthy problem.

MR. STEIN: In other words, you would expect for all your work to be completed by March 1, 1962, completed and in operation?

MR. McKINLEY: Let's put it this way, sir, that whatever was coming from the outfalls of these sewers would be treated. If we had a problem of treating too much storm water we would continue our operation of separation. That would be our burden resting upon us, but we would still fulfill the requirements of this conference group.

MR. HAPPY: You don't feel, then, that accepting the dates proposed by Mr. Metzler in regard to Kansas City, Kansas, would work any hardship on Kansas City, Missouri?

MR. McKINLEY: He has not changed any dates we have here, have you, Mr. Metzler?

MR. METZLER: No. Again I think I have done a poor job of pointing this out, but there is this, the construction of sewers is a lengthy business.

MR. McKINLEY: Sure.

MR. METZLER: And especially when you are separating storm and sanitary, and I wanted to point out that even though the treatment works were available and functioning on this date that we are talking about that the final separation might not yet have been completed.

MR. McKINLEY: If we are treating too much matter in our treatment plants but still accomplishing the purpose of treatment, that is none of the worry of any of the members of this conference, but it is a tremendous financial burden on the city, so, therefore, we would continue prosecution of that effort until we had brought that down to a near reducible minimum.

MR. HOPKINS: I think the conferees need agree only that the 1963 date for the separation of storm and sanitary sewage does not necessarily apply to the other two cities.

MR. STEIN: Correct.

Now, the next point we have to cover is the industrial sources. Now, there are two factors there. One, are the conferees agreed that industry should, as a general principle, apply to--conform to the same time schedule as the municipalities and thus by March 1, 1962, have effected a substantial treatment--satisfactory treatment of their domestic sewage and industrial wastes.

MR. HOPKINS: I think again we might keep in mind that these dates bear the connotation "Not later than".

MR. STEIN: "Not later than"?

MR. HOPKINS: And since industry does not have some of the problems that municipalities have in getting a favorable vote of the people, I think that it would be reasonable to assume that industry would proceed as fast as--as rapidly as feasible, consistent with the total objective but not later than these dates.

MR. STEIN: Your point is well taken.

MR. METZLER: I don't believe it is very safe for Mr. Hopkins to assume that it is easier to get a vote of a Board of Directors than it is a vote of the people. You have to have a logical case to present here in either event.

MR. STEIN: Very probably.

Now, there is one subsidiary question with industry that the conferees may want to consider, and that is whether we want to establish the date when the industries will advise the municipalities whether they are going to join their system or have their own treatment plants. Now, I don't know whether that is something you want to consider as part of the recommendations of the conferees.

MR. HOPKINS: I think a previous conference where that was an important issue was influenced by the fact that the industries were located outside the city, but in all probability would join with the city in a single

treatment plant. I think here with very few exceptions the plan is that industries will join in the municipal treatment plant and from statements made by at least two of the cities, if not three of the cities, I believe one of their reasons for a sizeable period of time between acceptance of the engineering report and the vote on the financing was to carry on negotiations with industry. So it would seem to me that the understanding should be that those understandings are reached prior to the scheduling of the bond issue, which would be a natural sequence of events, I believe.

MR. STEIN: Is that satisfactory to the other conferees?

MR. HAPPY: Yes.

MR. METZLER: Yes.

MR. STEIN: Now, I think at this point we can attempt to summarize the conference, unless the conferees have something to add at this point before the summary.

Is there anything to be added?

The summary, of course, as we make it here is subject to amendment by the conferees as we go along.

I think that the conferees have determined that at the Kansas City metropolitan area, comprised of the main Cities of Kansas City, Kansas, Kansas City, Missouri, and North Kansas City, Missouri, that the Missouri River forms a state boundary between Kansas and Missouri, that the principal sources of pollution in this area are the Cities of Kansas City, Kansas, Kansas City, Missouri, North Kansas City, Missouri, and associated industries from which untreated or inadequately treated sewage and industrial wastes are discharged into the river.

The conferees have agreed that this pollution contributes significantly to, 1, deterioration of water quality for public water supply at Lexington, Missouri, Boonville, Missouri, Jefferson City, Missouri, St. Louis City and St. Louis County, Missouri, with associated enhancement of possible disease transmission, increased concentrations of coliform and other organisms associated with human disease which constitute a health hazard to commercial and recreational users of the river, deterioration of water quality so as to prevent the full use of the river as a commercial fishery and also interferes with sport fishing, that it impairs water quality so as to interfere with navigation, that water quality is impaired so as to interfere with the actual and potential use of the river for many industrial uses, and that water quality is interfered with so as to degrade the area as a wildfowl habitat, that deterioration of water quality has occurred to the extent that severe sight and odor nuisances have been created, resulting in serious impairment of the river area as a recreational location for the people.

Now, I think the conferees also have taken cognizance that the cities in this area, and that includes all the principal cities, and the industries have made tremendous strides in dealing with this pollution problem. Largely this has been in the form of planning and considerable preliminary work.

The conferees have also agreed on a schedule for remedial action by the three major municipalities in this area. First it was agreed that basic engineering and feasibility reports for adequate remedial measures would be completed by Kansas City, Missouri, not later than March 1, 1958. The conferees have taken cognizance of the fact that North Kansas City and Kansas City, Kansas, have already completed this work.

The conferees have also agreed that the acceptance and revision of this basic engineering and feasibility report by the city officials be completed not later than September 1, 1958. Cognizance is taken of the fact that Kansas City, Kansas, has already done this.

The conferees unanimously agree, although with reluctance, that the three Cities of Kansas City, Missouri, North Kansas City, and Kansas City, Kansas, place the question of the financing before their voters not later than September 1, 1959. The conferees, however, strongly urge that the Mayors and other city officials of the three cities get together and explore the feasibility of putting the bond issue before their voters at an earlier date, preferably not later than January 1, 1959.

The conferees agree that the first construction contracts will be let for these remedial works by Kansas City, Missour, not later than January 1, 1960, by Kansas City, Kansas, not later than January 1, 1960, and by North Kansas City not later than June 1, 1960, with the understanding that the city officials of North Kansas City explore the feasibility of letting their first contract earlier so it may coincide with the schedule of the other two cities.

The balance of the construction contracts are to be let by Kansas City, Missouri, not later than March 1, 1960, by North Kansas City not later than September 1, 1960. Again the city officials of that city are urged to explore the feasibility of letting their contracts earlier so that it will coincide with the schedule of Kansas City, Missouri, and that Kansas City, Kansas will also meet this earlier schedule.

The conferees agreed that the treatment works and the collection of sewage for all these communities be completed and in operation by March 1, 1962, with the understanding that the complete separation of storm and sanitary sewage from Kansas City, Kansas, may not be effectuated until January 1, 1963.

The conferees also have agreed that industry follow a like schedule in completing adequate treatment works for the disposal of their domestic sewage and industrial wastes, that plants effectuating such treatment be put into effect not later than March 1, 1962, but that all efforts be made to secure earlier treatment if possible, and all industry is to give the city ample notification before the cities put the bond issue forward as to whether such industries are going to join the municipal system.

There is one other point which I would like to place in the summary which has not been discussed here, but this is a general point raised in other conferences, and that is progress reports at six months' intervals starting July 1, 1958, should be made by the appropriate officials of Missouri and of Kansas to the other conferees so that a determination can be made as to whether the schedule is being adhered to.

Is that agreeable?

MR. METZLER: Yes.

MR. HAPPY: Yes.

MR. STEIN: Are there any suggestions or corrections?

MR. HOPKINS: I would like to make two corrections. First your list of water plants adversely influenced omitted, to my knowledge, Glasgow and St. Charles, Missouri.

MR. STEIN: They will be added.

MR. HOPKINS: They could be added.

Then I would suggest that it be the understanding of the conferees that this effort or that attempt be made to apply this effort to the related communities in the Kansas City metropolitan area and to those communities downstream from the metropolitan area but who are not represented here today.

MR. STEIN: Is that agreeable to the other conferees?

MR. HAPPY: Yes.

MR. METZLER: Yes

MR. STEIN: That will be added to the summary.

Are there--

MR. METZLER: I would like to make one comment here.

MR. STEIN: All right. Mr. Metzler.

MR. METZLER: There is an area planning committee or organization, regional planning committee or organization, which is aiming at coordinating not only some of the items relating to sewage treatment but some other municipal functions of the area. It seems to me that we might urge that that group, and any others like-minded, take or exert the maximum effort in cooperation, one municipal group with another, in order to develop the most effective solution to this sewage treatment problem of the area and to do it at the least possible cost.

MR. HOPKINS: That is an excellent idea.

MR. STEIN: Now, before we adjourn the conference, does anyone want to make any comment or ask any question?

If not--

MR. HAPPY: May I ask, Mr. Chairman, will the Public Health Service again make transcripts of these proceedings available?

MR. STEIN: Yes, sir. The Public Health Service will make both a summary of the conference and a transcript of the conference available to the State Agency in such quantity as may be indicated that we have a demand for.

MR. HAPPY: May I then suggest that we, of course, see that those who have made statements--

MR. SELDON E. BROWN: May others besides State Agencies get a copy of the summary?

MR. HAPPY: That is just what I was just going to propose, that those who have made statements here today we will assuredly send them copies. Those others of you who have been good enough to attend today, if you will leave your name with Mr. Smith, those of you from Missouri, we will be happy to send you a copy.

MR. BROWN: What I have in mind, sir, I think it would probably be helpful if we could get a copy of that summary and supply it to interested people in industry in this area. There are things that have been reached at the conference here that many industry people won't know about unless somebody tells them.

MR. STEIN: I am sure that is correct. Now, as was pointed out early in this conference our function here primarily is to encourage the states which have the primary responsibility for controlling water pollution. In line with that philosophy the Public Health Service makes available copies of the summary and the transcript to the state agencies. The state agencies in turn will make distribution. In the past, and I would not like to speak too firmly for the states, in the past such distribution has been made to all the folks who have asked for information and that is done through your state agency.

I would suggest that those of you are are interested get in touch with Mr. Smith, who Mr. Happy designated, or Mr. Metzler, indicate your interest, and you also may wish to indicate to them a pattern of distribution if you think it advisable.

Would you want to give your name for the record?

MR. BROWN: My name is Seldon E. Brown. I represent the Associated Industries of Missouri.

MR. STEIN: Are there any other comments or questions?

If not, we will consider this conference closed and thank you very much for coming. We appreciate all your attendance and cooperation and participation.

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Appendix A

ATTENDANCE ROSTER

Conference on Interstate Pollution
Kansas City, Missouri

December 3, 1957

P. G. Barnickol	Missouri Conservation Commission
H. Roe Bartle	Mayor, Kansas City, Missouri
Ralph Bates	(Proctor & Gamble), Kansas City, Kansas, Chamber of Commerce
V. C. Cavin	President, Fairfax Industrial Association, Kansas City, Kans.
E. S. Charles	Acting Administrator, Platte County Health Department
Earl P. Coleman	Missouri Conservation Commission
Dale Cooke	Kansas City, Kansas, Health Department
Ralph Crain	North Kansas City, Missouri
I. C. Daniel	Public Works, Kansas City, Missouri
John Davis	Jackson County Highway Engineer
John S. Davis	Jackson County, Missouri
J. G. Detmar	Department of Health, Education, and Welfare, Regional Attorney's Office, Kansas City, Missouri
N. W. Dietz	Phillips Petroleum Company North Kansas City, Missouri
Leonard B. Dworsky	U. S. Public Health Service, Kansas City, Missouri
A. F. Dyson	Fairfax Drainage District, Wyandotte County

R. K. Elliott	North Kansas City, Missouri
W. G. Fish	Kansas City District, Corps of Engineers
Herbert J. Fisher	Missouri Conservation Commission, Columbia, Missouri
Howard G. Franklin	Quindaro Township, Foreman Water and Sewage Maintenance
Robert L. Garrett	Secretary, Kansas City Branch American Electroplaters Society, TWA Overhaul Base, MCI
R. L. Garten	Clay County Health Department, Liberty, Missouri
Dr. Lloyd R. Gates	Senior Public Health Engineer, Kansas City, Missouri
John W. Gavin	City Clerk, Sugar Creek, Missouri
B. J. George, Sr.	Kansas City Power & Light Company
Carl D. Gross	Illinois Sanitary Water Board, Springfield, Illinois
Albert W. Happy	Missouri Division of Health
H. M. Hardwicke, M. D.	Director, Division of Health, Jefferson City, Missouri
E. G. Harmon	Kansas City, Kansas, Health Department
H. O. Hartung	St. Louis County Water Department
Carl Hodgkinson	Kansas State Board of Health
Glen J. Hopkins	Regional Engineer, U. S. Public Health Service, Kansas City, Missouri
Ralph P. Humphrey	Chairman, Citizens Committee, Liberty, Missouri
John F. Ingrahm	R. J. Ingrahm

J. H. Johnsen	Assistant Plant Manager, Standard Oil Sugar Creek, Missouri
Charles B. Kaiser, Jr.	Metropolitan St. Louis Sewer District St. Louis, Missouri
William Q. Kehr	Metropolitan St. Louis Sewer District St. Louis, Missouri
Major Kelly	Administrative Assistant to Mayor Kansas City, Missouri
J. L. Kilroy	W. S. Dickey Clay Manufacturing Company
Charles A. LaKaytis, M.D.	Health Officer, District #1 Cameron, Missouri
Col. L. E. Laurion	Corps of Engineers, Kansas City District
I. M. Lefton	Sanitary Engineer, Municipal Service Company, Kansas City
Stan Leppard	Kansas City Star, Kansas City, Missouri
J. H. McCutchen	Division of Health, Jefferson City, Missouri
Reed McKinley	Director of Public Works, Kansas City Missouri
M. E. McMahon	Phillips Petroleum Company
J. C. Malloy	Kansas City, Kansas, Chamber of Commerce, Subcommittee on Pollution
A. J. Mangelsdorf	City of Atchison, Kansas
Donald W. Marshall	District Engineer, District Health Office #1, Cameron, Missouri
Larry Meadows	Associated Industries of Missouri, Kansas City Office
Dwight F. Metzler	Kansas State Board of Health
Myron K. Nelson	Johnson County, Kansas
R. M. Newman	Kansas City, Kansas

O. M. Nichols	Assistant City Engineer, Kansas City, Missouri
Carl R. Noren	Missouri Conservation Commission Jefferson City, Missouri
Stanley C. Palmer	City Engineer, Kansas City, Missouri
Earl T. Phillips	TWA, Inc., Cameron, Missouri
William L. Porter	Jackson County Health Department
H. W. Poston	U. S. Public Health Service Chicago, Illinois
C. C. Potter	Kansas City, Missouri, Health Department
Richard Reavis	City Engineer, Liberty, Missouri
Joe S. Rockwood	Department of Health, Education and Welfare, Regional Attorney's Office Kansas City, Missouri
R. S. Roper	Sugar Creek, Missouri
Dick Rotscl	Missouri Conservation Commission
D. B. Runnels	Community Studies, Inc.
R. D. Scharz	North Kansas City, Missouri
J. F. Schipper	Corn Products Refining Company
Truman Schlup	Kansas City, Kansas
Clifford Sharp	Kansas City, Missouri, Consulting Engineer
J. R. Shearer	Fairfax Industrial Association
B. L. Skinner	TWA International Airport
Jack Smith	Missouri Division of Health, Jefferson City, Missouri
Murray Stein	U. S. Public Health Service, Washington, D. C.
A. E. Stuenkel	Corn Products Refining Company

William E. Turnage	City Attorney, Liberty, Missouri
John Vawter	Kansas City Star, Kansas City, Missouri
Jim Walsh	KCMO News, Kansas City, Missouri
Sally Weintraub	Community Studies, Inc.
C. David Whipple	Mayor, Parkville, Missouri
Alfred H. Wieters	U. S. Public Health Service, Washington, D. C.
John Wilkerson	Kansas City, Kansas, Chamber of Commerce
O. T. Wright	Missouri Conservation Commission
William R. Yerkes	City of Atchison, Kansas